ASL

Australian Society

for Limnology Inc.

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AUSTRALIAN SOCIETY FOR LIMNOLOGY INC.

The Australian Society for Limnology (ASL) is an Australian-based scientific society whose focus is the study and management of inland waters. The ASL was established in 1961, and has a current membership of over 650 researchers, managers, engineers, teachers and tertiary level students from all states and territories. Members have a strong professional interest in inland aquatic issues, including the maintenance of biodiversity, the maintenance and/or restoration of water quality, and the wise use of aquatic resources. The Society also has a strong interest in fostering the scientific and intellectual development of tertiary students.

The Society includes members working in government agencies, tertiary institutions and many industries related to aquatic resources. Through their daily activities, members have contact with local communities and are in a sound position to interpret and advise on inland water issues. The Society has a substantial knowledge base, and has assumed a responsibility to ensure that this is available to those who manage inland waters.

Accordingly, the charter of the ASL is to further our understanding of Australia's inland waters and to promote their wise use and sustainable management. In this manner we will contribute to the continued existence of this valued resource and the maintenance and enhancement of the quality of life for all Australians.

The ASL regularly produces a newsletter with notes on limnological activities, articles of interest, book reviews and announcements of upcoming events likely to be of interest to Members.

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Membership Information and a list of the Regional Executive Officers can be found at the back of this Newsletter.

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All articles should be forwarded, if possible, as unformatted text on a disk or via email.

ASL Home Page - http://www.asl.org.au/

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EDITORIAL

This issue sees a wad of stuff from Tassie, New Zealand and elsewhere. If you are a student, make sure you catch up with how ASL Congress awards will now be judged.

This is the first electronic/paper version newsletter, about 70 people have received either pdf or rtf files via email. There may be a few glitches so be patient with us.

You too can join the revolution, either fill out the form at the back of the newsletter, or even easier, follow the prompts at the ASL web site, when your browser is working. Besides saving a few branches from some trees, a bit of money for the Society, you also get your copy of the newsletter 2 weeks earlier than those receiving it by post.

Now for a lot of thanks.

This is my last newsletter, number 12, well 11 if you count the combined issue in Dec 1998, 3 years of service. Thanks to your new Editor, Rhonda Sinclair, for so promptly volunteering to take up the challenge. I hope you enjoy the experience as much as I did. She actually helped out with this issue, by updating the phone numbers and other details of the ASL Expert volunteers.

Thanks to Margaret Hart and Simon Josey for helping the electronic newsletter get sorted out.

Thanks to Margaret Hart over the last three years, sorting the labels and wrestling with an eight-year old computer.

Thanks to Tim Doeg, for providing us with regular postcards from the real world. Hopefully, he will continue to enlighten us in future editions.

Thanks to the regular contributors to the scuttlebutt section and all others who provided stuff over the last 3 years.

My friends at Border Multi Print made the job a lot easier, Kalianna Pty Ltd have also been fantastic.

And a final thanks to the ASL Exec, both the last and present bunch, for their support.

The Ed.

PRESIDENT'S REPORT

Well an end of an era. Our excellent newsletter editor bid us adieu. Ivor has been keeping us abreast of limnological rumour, pranks and scuttlebutt, congresses FASTS and I know not wot since 1998. Thanks heaps Ivor – you've done a great job (you try getting the latest goss across Australia to meet a deadline every quarter) with calm efficiency and necessary roguish wit. Ivor has been a very active editor, the newsletter grows in news and features all the time – now available electronically as well. This prestigious post now passes on to Ros Sinclair. I await with eager anticipation what exciting events she has in store for the newsletter. What bribes are required to get good press.....

You should have received the registration info for the ASL congress at Moama in September or it is on the web at http://www.asl.org.au/asl_congress_2001.htm. Get your registration in early – it looks like a great time has been planned by our hard-working organising committee. Keep an eye out for the ASL pub nights – I haven't heard how the platypus fared in Sydney yet and Qld has another on June 21. And have a look at the promo (page x) for the Science Meets Parliament Day – a well worthwhile event that you might not have previously considered.

I recently attended the FASTS national forum on the Governments Innovation Action Plan "Backing Australia's Ability". FASTS kindly waived registration to member society presidents. I have included an abbreviated summary of the day provided by FASTS (page 38 - it was such a good summary I didn't bother writing up my extensive notes). The main areas of interest to ASLers was the increase of $227 million to the CRC program and 2000 new university places in science. Although in the latter there was some disagreement between what DEETYA had in mind and what the general feeling of the universities in the audience as to its implementation. If you want to know more about this forum, please contact me or go to FASTS web page http://www.FASTS.org/.

While in Canberra I had a meeting with Land and Water. They have recently drafted their strategic plan for research and development for the next five years and the exec considered it important that ASL have some input into that process. I reviewed the plan and made a presentation to them. Our concerns based on our policy documents etc appeared to be taken on board and I put forward that ASL should be considered a key stakeholder in matters pertaining to the Australian aquatic environment. We now have formal contacts between the two organisations (which at present is the ASL president, but this position can be held by another on the executive). While there I spoke to several people about areas of possible collaboration eg with the National Rivers Consortium. A good first step to build upon.

FASTS recently contacted ASL inviting us to provide nominations for the Alligator Rivers Region Technical Committee (ARRTC). Minister Robert Hill asked FASTS to select seven independent members ARRTC. "The main aim of the revised role and membership [of ARRTC] is to ensure that the quality of the science used in the research into, and assessment of, the protection of the environment from the impact of the uranium mining is of an appropriately high standard. This Committee will be able to report openly, independently and without restriction." ASL put forward Terry Hillman, Peter Davies and Pierre Horwitz. We have yet to hear of the success of our nomination.

Well I'd better shut up or Ivor will cut me off. See you all at Moama!

Cheers, Jane Chambers
President June 1st 2001

SCUTTLEBUTT, RUMOUR AND A BIT OF PRATTLE

AUSTRALIAN WATER QUALITY CENTRE

BOLIVAR SOUTH AUSTRALIA

Aquatic Ecology & Biomonitoring sub-unit

All eight of us are very busy with the end of financial year approaching. Projects receiving our attention included work on Bookmark Biosphere, the South East (SA) Catchment Water Management Plan consultancy, the Onkaparinga River environmental flows consultancy, work for the Blue Mountains Council and DLWC.

There is renewed activity from SA Water in sampling Wastewater Treatment Plant impacts with new projects on the books.

The locust spraying impact study has been completed as has a toxic groundwater impact study.

Daria Schulze went on leave for 3 weeks. She returned as **Daria Taylor**; congratulations **Matt**. Our old colleague, **Rob Walsh**, has completed his tour of duty with Department of Environment and Heritage and will be returning to Tasmania.

from

Peter Schultz

CENTRE FOR CATCHMENT AND IN-STREAM RESEARCH, GRIFFITH UNIVERSITY, BRISBANE

In April, the dryland river refugia team successfully completed their first field trip to the Cooper Creek channel country. Seventeen CRCFE researchers were involved with 11 from Griffith University, one from the Goondiwindi Lab, one from QNRM and six from the University of Canberra. The broad research objectives of the project are: 1). To determine the importance of waterholes as refugia for aquatic organisms in dryland river catchments. 2). To identify the biophysical processes that sustain biodiversity and ecosystem health in dryland river refugia.

Fifteen waterholes across four locations were sampled. Data were collected on fish diversity and abundance, benthic and nektonic invertebrate diversity and abundance, geomorphology, aquatic and riparian vegetation and benthic production. Samples were also collected for food web analysis. Fish and invertebrate samples were retained to assess genetic diversity and to address questions about connectivity among waterholes. **Arthur Georges** (University of Canberra) kept us all entertained with valuable lessons on how to keep your gear in one place. We managed to find the boat that escaped from the trailer, but not the stomach flushing gear. A lucky person between Canberra and Windorah is now the proud owner of this prized equipment.

The CCISR research labs have been undergoing a major facelift. Keeping one room ahead of the builders has been a challenge, however, our sparkling new labs make it worthwhile. So attractive is the new microscope lab that **Fran Sheldon** has already been spotted picking refugium project bug samples.

We will farewell **Michelle Winning** in July as she and her husband embark upon a Northern Adventure in the ever-reliable Combi. **Michelle** will be sadly missed by all and we hope to see her again not too far down the track.

From

Stephen (Harry) Balcombe

SCHOOL OF ECOLOGY & ENVIRONMENT, DEAKIN UNIVERSITY, WARRNAMBOOL.

Things have been quiet from us for a while because your correspondent has been on leave - **Ed Chester** & **Belinda Robson** welcomed **Vivienne Hypatia Chester** into the world on 18 January. **Belinda** has been back at work since March but left her memory behind somewhere! **Ed** never stopped working, running a field experiment during the week of the birth and setting a new standard for enthusiasm in PhD research.

Al Danger and **Tim Forrester** began PhDs with **Belinda** this year. Al is working on organic matter breakdown in intermittent and permanent streams and **Tim** is continuing his work on invertebrate biodiversity in the Otways Ranges. **Tim** also won the **Russell Yencken** Award for the best Honours project leading to PhD candidature. **Denis Lovric** commenced a PhD towards the end of 2000, with **Belinda** and **Brad Mitchell** as supervisors, **Denis** is studying macrophytes in the Barwon River, in cooperation with the Corangamite Catchment Management Authority. **Jan Barton** has left Vic EPA to join us, enrolling in a PhD with **Peter Fairweather**.

After completing an assessment of the Elodea problem in the Merri River and having his PhD (on estuarine bivalves) passed, **Ty Matthews** has begun work on a project with **Belinda Robson**, looking at the contribution of various potential desiccation refuges to benthic algal communities in Grampians streams. Over summer, **Lauren Kelly** completed her Honours project on the Gellibrand River estuary and wetlands, which was supervised by **John Sherwood** and **Belinda Robson** and supported by the Princetown Landcare Group.

Dr Belinda Robson

INLAND FISHERIES SERVICE

Maybe you didn't know but Tasmania's Inland Fisheries Service is about more than trout management! Although a small statutary body with around 30 scientific staff supported by enforcement and admin, we are responsible for management and protection of all native freshwater fish and invertebrates. Main areas we work on are conservation of some of our 12 threatened freshwater fish species and the giant crayfish, water quality and biological monitoring for Hydro Tasmania, commercial fisheries (eels, aquarium industry etc), recreational fishing (mostly trout), carp eradication, restoration of lakes Crescent and Sorell, farm dam assessment and rivercare activities.

Conservation work centres on the actions described in a recovery plan for 5 galaxias species (see our website, www.ifs.tas.gov.au), with funding from the Natural Heritage Trust. A major step towards a secure future for the endangered Pedder galaxias was taken this year. We were able to move 52 fish from the refuge population established in a remote SW lake in 1991, to a second site in an artificial dam modified specifically by Hydro Tasmania for Pedder galaxias habitat. The fish will be closely watched to see if they establish successfully. The species can no longer be found in what remains of its natural habitat, due to habitat destruction by flooding and trout introduction.

A major activity during the last year has been contributing to environmental assessments for Basslink, the scheme to link Tasmania to the national power grid with an undersea cable. With the ability to sell power to the mainland, there will be changes to storage management and river flows. Surveys and modelling have been conducted to determine likely effects on aquatic fauna, geomorphology and other environmental values. For more information check www.basslink.com.au or www. hydro.com.au/basslink.

IFS staff have also had input to preparation of a Water Development Plan for the State, which will "provide a strategic overview for water use and development". The plan is due to be completed in June and further information is available at a webpage accessible via www.dpiwe.tas.gov.au under Land and Water resources.

During 2000 the IFS and Hydro Tasmania obtained FRDC funding to assess the impacts of hydro-electric dams on eel stocks and assess mitigation strategies such as fish ladders and translocation. Damming of rivers and flow regulation has obstructed eel migration in many catchments to the extent that the commercial eel fishery is maintained by stocking waters with elvers. The project is currently examining eel population structure in different waters, both stocked and with natural recruitment, using otoliths to age the fish. This has proved difficult with complex otolith band patterns.

The first of our fishery management plans is in preparation, for the Western Lakes wilderness fishery. This is a highland area of thousands of lakes on the Central Plateau within the World Heritage Area. Many management issues are already addressed in the WHA management plan, but the Western Lakes plan will specifically address freshwater issues relating to angling and native fauna conservation. For more information contact Rob Freeman, robf@ifs.tas.gov.au.

Recreational fishery management continues to focus on Lake Sorell, a once prime trout fishery that has declined dramatically over the past 6 years. Problems include extremely low lake levels, impacts on surrounding marshland from draining and grazing, loss of macrophytes, high turbidity from wind-driven sediment suspension, presence of carp and degradation of the main trout spawning stream. Trout in the spawning run are currently being tagged to enable a recapture population estimate. Trout aging using otoliths is proving successful and the industrial hum around

our offices at Derwent Park now also comes from the gem cutter in the lab. A large NHT-funded project is working towards restoration of this lake and adjoining Lake Crescent, which are the entire range of the endemic *Galaxias auratus*. This project is described in more detail by Danielle Heffer.

Another major project occupying IFS staff is TIGERS (Trials of Innovative Government Electronic Regional Services), a Commonwealth initiative linking with state and local government. The first trial is on recreational fishing (matine and freshwater) and will produce a website that draws together all the relevant government agencies including stock management and safety in a "service pack".

From Jean Jackson

WATERY NEWS FROM FOREST PRACTICES BOARD, TASMANIA (AND ASSOCIATIONS)

With the Tasmanian giant crayfish (*Astacopsis gouldi*) leaping into the spotlight, along with many other issues concerned with the management/protection of headwater streams in the forestry estate, a couple of new projects have been set up to tackle the issue. **Fiona Wells** has taken up the challenge of one, and is developing a classification of class 4 streams (that's 1st order streams for you mainlanders) looking at the potential environmental risks associated with forest practices. This is but the first step in the process of establishing better management prescriptions for these bonza streams!! **Mark Risdon** is also plunging into the class 4 streams issue with a PhD project at Tas Uni in conjunction with FPB. He is investigating the recovery of class 4 streams after logging.

A number of aquatic fauna related studies are also currently in action. These include three investigations into species of *Beddomeia* (an important group of Hydrobiid snails in Tasmania). **Peter Davies** and **Laurie Cook** (of Freshwater Systems) are studying the impacts of the forestry industry on habitat and abundance of *Beddomeia*, as well as trying to map the range of *Beddomeia launcestonensis*, a species which is currently known from a handful of locations near Launceston. Also on *Beddomeia*, **Karen Richards** (part-time FPB zoologist and PhD student at Uni Tas) is looking into the distribution and genetic variation of 15 species of *Beddomeia* and investigating allozyme variations within several populations of *Beddomeia*.

Platypuses, or should that be platypi? are an issue for **Sarah Munks**, who is looking into the diet of these quaint vertebrates.

OTHER BITS FROM TASMANIA

University of Tasmania

Brita Hansen has completed her thesis on the systematics, phylogeny and biogeography of the freshwater crayfish genus Parastacoides. Also Tom Sloane's Honours project on habitat requirements of dytiscid beetles will be completed shortly. Confident in the fruits of his lab, Alastair Richardson heads off overseas soon to talk crayfish with the Americans at NABS.

Department of Primary Industries, Water *and* Environment

New Town Laboratories: Freshwater Ecology

Martin Read, **Tom Krasnicki**, **Rebecca Pinto** and **David Horner**, are thoroughly immersed in environmental flow recommendations and monitoring for river systems around Tasmania. They mix this up with a bit of reporting on the river health program and their orgoing monitoring of the Mersey River. **Cameron Amos** and **John Gooderham** continue to keep them in line from behind their microscopes with a 'bottom up' management style that is heavy handed, but fair. In her spare time **Rebecca Pinto** enjoys working on her masters project: "Responses of instream biota to fluctuations in environmental flows: effects of hydropower surges on bed shear stress." This project will provide a rare chance to look directly at conditions on the stream bed, while a hydro Dam is shut down and then re-started in increments up to full power production.

The Tasmanian ASL Pub Talk series

We are about halfway through our second series of talks in Tasmania and this seems like as good a spot as any to thank the people below who put together a sterling set of performances in all the past talks. The cast (in order of appearance):

John Diggle (IFC)"Looking at the problems in Lakes Sorell and Crescent"
Leon Barmuta (Tas Uni) "So many different sorts of statisticians: what's a poor user to do?"
Niall Doran (DPIWE) "Warm & furry, small & scaly, cold & hard: another day in the development of Tasmania's Nature Conservation Strategy."
Jean Jackson (IFC) "Fish and Ice: the mysterious distribution of the endangered Clarence galaxias"
Peter Davies (Tas Uni) "The impact of Hydro development in Tas"
Ian Houshold (DPIWE) "Bugs and bedload - geomorphic controls on instream habitat and some puzzles for river managers".
Helen Otley (Huon Waterwatch) "Do you have to be a scientist to collect good data?"
Mike Temple-Smith (DPIWE) "Water Reform - Tasmanian Issues and Experience."
Jackie Griggs (Hydro Tas)"Chydorids, mountaineering and The Italian Job: what is the connection??"

John Gooderham

WSL CONSULTANTS

The WSL biology lab has settled in for a long hard winter. With shelves full of wetland samples from Northern NSW, courtesy of the Dept Land and Water Conservation, it's all hands on deck. We're working our forceps to the bone and we welcome with open arms **Katrina Cousins** (ex-CRCFE, Canberra) to help us, particularly with preliminary sorting of samples. Katrina has settled into the lab straight away and seems to be enjoying seeing the Canberra temperatures from a safe distance.

We've just farewelled **Amanda Norris**, visiting Australia from England. With us for 2 months, Amanda has left to do what any sensible traveller should do in a Melbourne winter – driving over to Perth and heading up the West coast.

The Enviro2002 and the IWA World Water Congress preparations have begun. As conference chairman, WSL's managing director **John Parker** is ensuring limnology gets the high profile it deserves on the international water scene.

Alistair Cameron will be producing a presentation with **Vin Pettigrove** and **Rhys Coleman** of Melbourne Water on the effectiveness of artificial riffles within urban, concrete-lined channels on maintaining biodiversity. Results indicated that the number of macroinvertebrate taxa in the artificial riffles was only slightly lower than that found at the reference site. **Patrick Maiden**, with **Peter Donlon** of Goulburn Valley Water and **Paul Leahy** of Centre for Palynology and Palaeoecology, Monash University, are presenting a paper on the effectiveness of a the new ACTIFLO wastewater management facility in Shepparton. Using diatom, phytoplankton and macroinvertebrate data, a comparison of the instream effect of the old and new treatment plant technology will be presented.

We have also begun a research project in collaboration with **Vin Pettigrove** of Melbourne Water investigating the effects of re-snagging in the Little Yarra River near Yarra Junction. An initial sampling run has already been conducted with a second run to follow in April 2002 following re-snagging.

Meanwhile, our macroinvertebrate work involved with EPA compliance testing have been sorted and reports are being written. As much as we miss visiting our favourite poo-farms, it's a task we will have to wait until spring to jump back into. **Jim Radford** is enjoying the chance to finish his PhD in the relative quiet of Bendigo (with toddler **Georgia** wanting to proof read drafts). **Kylie Swingler** is pregnant, carrying **David Bryant**'s child of lust. Those two just can't help themselves, jumpin and jigy jiggy all the time.

from Patrick Maiden

UNI OF NEW ENGLAND, ECOSYSTEM MANAGEMENT

The big floods down on the north coast of NSW were a mixed blessing for research students at UNE - **Marcus Finn**, working on ecological responses to low flows in two rivers in the Hastings catchment was washed out on his last trip and had to wait for levels to fall. Meanwhile, the start of **Anna Guerney**'s Hons project on EPT responses to a head-cut in the Wilson River became transformed into the effects of floods on a head-cut! But the good news was that after our team had spent most of the summer creating artificial floods in the Never-Never River to assess the response of hyporheic invertebrates to spates, we had four sets of pre-flood data just ready for the 1 in 20 year scour that roared down the river. We managed to get in there a week later, and **Amanda Byrd**'s Honours project is now well under way, tracking changes in silt, fauna and water chemistry in the hyporheic zone. Also on hyporheic projects, **Ryan Szuch**, a visiting Fulbright scholar, has commenced his project on nitrogen dynamics in a sand-slugged stream and is currently developing solute injection techniques guided by **John Duff** and colleagues from the USGS. **Ryan** also plans to do some chamber metabolism studies and will be at the ASL meeting in September for those who want to talk with him about postgraduate life in the States.

University Medal winner **Wendy Miller** has commenced her PhD on urban stream ecology in a rural setting, looking at effects of Armidale on Dumaresq Creek, the local 'town drain'. Student projects have been done in this area for nearly 40 years, and **Wendy**'s biggest job will be drawing together a large amount of data of variable quality to see what trends emerge. However, her early bug-sampling forays reveal a surprising diversity of invertebrates and has coincided with a major program by the Council to cut and poison willows from a large section of the stream. **Kim Jenkins** is weeks away from the completion of her PhD thesis, while **Rachel Eberhard** is also close to finishing her Masters thesis on the effects of a dam on downstream fauna, comparing the success of various permutations of the SIGNAL index in Queensland. Other projects running smoothly include **Tho Tien**'s study of the water budget and management of Howard Springs near Darwin (featured on a recent episode of 'The Great Outdoors') and **Natasha Ryan**'s work on patterns of blue-green algal blooms in the Myall Lakes. **Sarah Mika** is exploring the effects of sedimentation from rivers running into the Solitary Island Marine Park on estuarine meiofauna in the Park, integrating this with other biological measures of 'sediment health' currently been trialed in conjunction with the Marine Parks and Coffs Harbour City Council. If anyone knows of a taxonomist interested in marine harpacticoids from northern New South Wales, we would love to hear from you!

Finally, **Andrew Boulton** is enjoying watching all these students doing such hard work but occasionally takes some time off to process a few of the 300 hyporheic bug samples that emerged from the summer sampling frenzy and to analyse data emerging from a 3-year study funded by the Cotton CRC on water quality in the Gwydir system and a number of cotton farms in the Valley. He is also collaborating with **Stefan Eberhard** and **Bill Humphreys** to draw together our knowledge of groundwater fauna and threatening processes for the coming Fenner Conference in July.

From: **Andrew Boulton**

OTAGO FISH ECOLOGY GROUP, UNIVERSITY OF OTAGO, DUNEDIN

Ben Ludgate's (MSc) study on the impact of European perch on a lowland wetland has reached the final stages of writing up. The results so far are very promising, and indicate that European perch are having a strong negative impact on the abundance of small benthic endemic fish. **Gerry Closs** is actually working on this project as well, and in conjunction with Ben, is studying the effect of perch removal on macroinvertebrate populations. However, Gerry will not be sorting any samples as he has an allergy to laboratories. Instead, the talented **Nathan Whitmore** has sorted them in exchange for spare change. Unfortunately, Nathan has now left the laboratory to pursue a life without science in Japan. Gerry was last seen trying to make sense of Excel spreadsheets.

Gerry, **Jonathan Kim, Monty Wright, Jonathan Waters** and **Andreas Markwitz** have also commenced a study of the distribution of sea-run and resident brown trout spawning sites in the Taieri River catchment. Separation of eggs and juvenile fish from sea-run or resident freshwater maternal fish will be distinguished through analysis of the strontium content of the eggs and otoliths respectively.

Amy Whitehead (Hons), continues to tie up some of the loose ends associated with Bruno's project (brave girl!). She is focusing her research on the ontogenetic niche of giant kokopu (galaxiidae), and is finding that juveniles and adults are segregating microhabitats within the stream.

Ruth Goldsmith (PhD) has moved into the laboratory for the winter to continue her studies of European perch and common bully interactions. Summer field enclosure experiments showed the presence of adult perch had a significant negative effect on bully survival and also led to increased use of refuge areas by bullies.

Colin Townsend's research group has been working since 1989 on the ecological consequences of invaders. With **Kevin Simon** (Post-Doc) he is currently studying the ecosystem consequences (particularly in terms of nutrient flux) of the replacement of native non-migratory galaxiid fish by invading brown trout.

Bruno David (PhD) continues to write up his definitive thesis on the ecology of giant kokopu, and is beginning to concern himself with finding a job, and life after studentdom. Bruno, Gerry and Ruth have recently returned from a "pest-fish" (anything but galaxids in New Zealand!) workshop in the North Island. This workshop highlighted exotic poecilids, perch and cyprinids as the major causes of concern (introduced trout are more widespread and abundant than these fishes, but they make too much money for the country!). Also, the importance of educating and involving the public in the control of pest fishes was highlighted, and it is apparent that agreement and coopereation amongst conservation and fisheries agencies (that may have conflicting interests will be needed if the spread of exotic fishes is to be stopped.

Cornelius Kater has successfully mapped fish habitat use in fifteen streams around the Otago Harbour and Peninsular. He is also examining the effects a recent drought has had on a banded kokopu population.

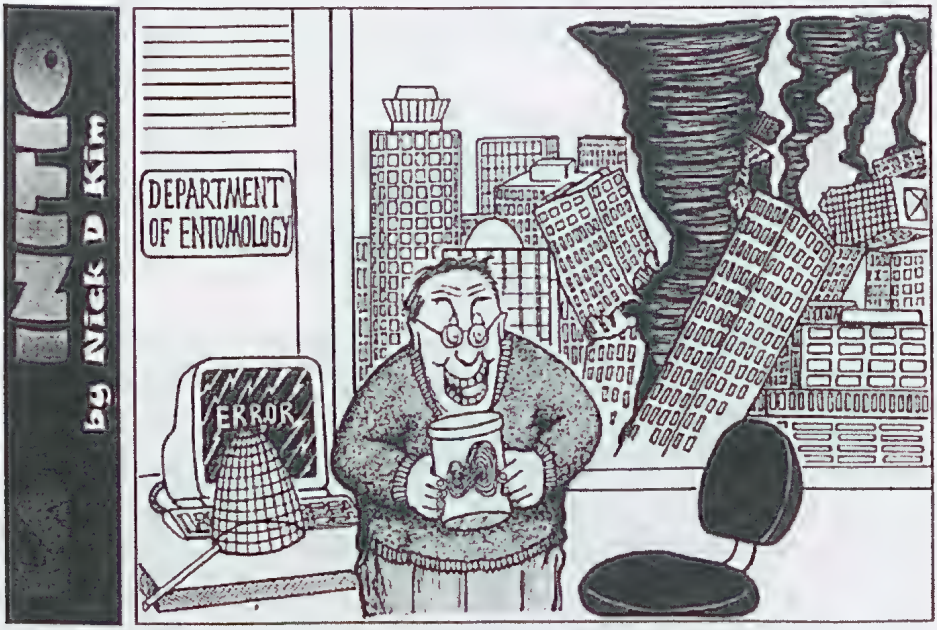
Lastly, I'm (**Rick Stoffels** (PhD)) still sifting through littoral-benthic invertebrate samples and quietly going mad, while contemplating a career as a cabaret singer. I'm half way; 200 samples down, 200 more to go! On a more serious note, I have recently been successful in a minor grant application, and now have an extra $6000 to pursue my interests of trophic dynamics and energetics of littoral zone fishes using stable isotope ratios of C and N.

'til next time, **Rick Stoffels**.

MURDOCH UNIVERSITY

Second semester is fast approaching at Murdoch and the corridors are alive with people busily preparing unit materials, lectures and labs. **Jane Chambers** has recently returned from Canberra where she met with people from LWRRDC and FASTS (see the Presidents Report). **Halina Kobryn** is still in celebration mode after submitting her PhD last week. A two year research project being undertaken by **Jenny Davis, Arthur McComb, Megan McGuire** and others from ECU and UWA is coming to an end. This project focused on predicting wetland response to changes in water quality and quantity. The final product for the project is a CD and this be ready in early July. Unfortunately we have all been working so hard lately that that's about it !!

From: **Megan McGuire**



"I've done it..!! I've caught the Lorentz butterfly...!!!"

CENTRE FOR WATER RESEARCH UNIVERSITY OF WESTERN AUSTRALIA

CWR has been busy over the last month, with **Carolyn Oldham** appearing on 'Stateline' earlier this month to discuss canal developments and their impacts on water quality, destruction of wetlands and input of nutrients to the coast. Whilst on the research front, **Carolyn** and **David Hamilton** are about to be involved in another collaborative wetlands based project examining the critical pathways in wetland degradation, with people from Environmental Science, Murdoch University and the Centre for Ecosystem Management, Edith Cowan University. Meanwhile **Barbara Robson** is continuing work on modelling the infamous mycrosystis bloom that occurred in the Swan River last year and I am continuing research on wetland response to changing disturbance scenario's for wetlands in Western Australia for inclusion on a CD for wetland manager's in W.A. This is part of another collaborative research project between CWR, Murdoch and ECU.

Further work involves the continuing use of the 1D-DYRESM model and the 3D-ELCOM model and CAEDYM (ecological model) for looking at water quality of lakes, especially modelling phytoplankton and other bugs. **Lousie Bruce**, a PhD candidate is currently using these models and researching salt lake biota, whilst **David Hamilton** is involved with the testing of the sediment re-suspension component in CAEDYM, through collaboration with the University of Tasmania.

On the postgraduate front: **Alisa Krasnostein** is loving her work so much, she has decided to upgrade to a PhD and will be continuing research on her wetland water balance model for at least another year. **Terry Chan** has nearly finished his PhD on phytoplankton succession in the Swan River... or so he keeps saying and **Kathyrn Linge** is also close to finishing her PhD work on contaminant release from wetland sediments, but also seems reluctant to leave uni life.... **Sri Adyanti**, a newcomer from Indonesia, is starting work on a lake management tool that will allow users to determine management issues and look at nutrient dynamics within any specific lake, and an honours student, **Sarah Mac Nish**, is just starting work on trying to model the effects of different inundation regimes on vegetation in wetlands.

From: **Emma Gale**

MURRAY-DARLING FRESHWATER RESEARCH CENTRE

The Lower Basin Laboratory, in association with Rotary District 9520, doubled their numbers for this year's River Health Forum (held over 5-8 April) with 51 Year 9 and 10 students. Based at Lake Cullulleraine near Mildura, the students learnt about the real-world demands on our river systems, from an ecological, social and economic perspective. Working in groups, and supported by staff from the Lower Basin Laboratory, the participants also learnt about river health, best management practice and how to communicate their ideas to non-scientific audiences.

Mary White (author of "The Greening of Gondwana", "After the Greening", "Listen..... Our Land is Crying" and "Running Down - Water in a Changing Land") visited MDFRC on 6 April to chat with the researchers on a new book she is writing on "The Biosphere" (symbiosis, nutrient cycling, how our ecosystems are specially adapted to the local environment etc).

The highly successful 6th Rotary Murray-Darling School of Freshwater Research was held from 16-20 April. This year's "Albury Easter School" had its 34 year 11 and 12 students from across the Murray-Darling Basin, observing and sampling the Kiewa River from its source in the Bogong High Plains to its confluence with the Murray. Participants' evaluations show the School is successful in encouraging students towards choosing a career in science. Feedback from students who attended the first Summer/Easter Schools, and are now at university, consolidates that impression.

An Honorable Mention in the Young Water Scientist of the Year Awards was given to **Alison King** for her work on fish nursery habitats in floodplain rivers. **Alison**, of Monash University and based at MDFRC, was one of five finalists. The winner was **Rebecca Bartlett** from CRC for Catchment Hydrology for her work on sediment slugs in streams. The Young Water Scientist of the Year Award recognises young scientists with outstanding research ability, good communication skills and an understanding of industry needs. The award is made annually to a student in one of five water-related Cooperative Research Centres, collectively called the Water Forum.

Terry Hillman and **Rhonda Sinclair** attended the launch of the Upper North East Water Quality Strategy at La Trobe University (Wodonga) on Friday 4 May. The Strategy was launched by Ms Sherryl Garbutt (Victorian Minister for Environment and Conservation).

John Hawking has recently been involved in training over 40 Waterwatch coordinators and monitors in invertebrate sampling, sorting and identification skills for Waterwatch Victoria. A field guide was produced with support from the CRC for Freshwater Ecology.

Terry Hillman attended a meeting at Narrabri, organised by the Australian Cotton CRC on "Opportunities for Collaboration in Catchment Management for the Cotton Industry" on 10 May.

Stage 1 of the Second Year Review of the CRCFE was held at the Water Studies Centre, Monash University on 10 and 11 May. The Review team was **Prof Ian Rae** (Chair), **Dr Barbara Bowles** (Centre Visitor), **Assoc Prof Jenny Davis** (Murdoch University) and **Assoc Prof Pierre Horwitz** (Edith Cowan University). Stage 1 is an independent scientific and technical review of the CRC's research activities, and how they come together to deliver the commitments in the CRC contracts. The Second Stage Review will be 27 and 28 September. The Stage 2 review will cover the non–research programs of the CRC – Knowledge Exchange, Education and Administration. MDFRC staff involved were **Drs Paul Humphries, Darren Baldwin** and **Terry Hillman.**

Russ Shiel has been invited by **Prof. Ramesh Gulati** for an Australasian summary for a forthcoming symposium volume on 'Recent Developments in Fundamental and Applied Plankton Research', which was held in Amsterdam (March 2001). As there was no representation from Australasia, **Prof. Gulati** requested a summary treatment from **Russ**.

Fenner Conference: Biodiversity Conservation in Freshwaters, Australian Academy of Science "Shine Dome", Canberra, 5 to 7 July 2001. Register electronically on the Fenner Web Page at http://aerg.canberra.edu.au/fenner/ - An early-bird discount of $100 for those registering before May 18, bringing the full registration down from $445 to $345. **Russ Shiel** is a joint author of a paper with **Halse, S.A., R.H. Froend & D.J. Cale** on "Biodiversity is multi-faceted: cross-taxon congruence in species richness patterns in wetlands."

A new book, *Rivers as Ecological Systems: The Murray-Darling Basin*, edited by **Dr Bill Young** is now available. A result of cooperation between the Murray-Darling Basin Commission, Land and Water Australia, Environment Australia, CSIRO Land and Water, and the CRC for Freshwater Ecology, the book brings together the knowledge on the relationships between river ecology and river flow.

From: **Daryl Nielsen**

NIWA AUSTRALIA

Since our last contribution, we have been finalising the set up of the office at Bowen Hills (Brisbane). We had our official opening on April 26, with over 40 people in attendance, including our CEO **Paul Hargreaves** and a number of others from our parent company, NIWA. **Ngaire Phillips** and **Kym Seebohm** have also started to "spread the word" on a number of awareness raising trips to Canberra (along with manager **Jim Cooke**), Melbourne and Hobart. We are keen to talk to interested parties about potential collaboration on research projects. There are a number of potential projects in the pipeline.

From **Ngaire Phillips**

CURTIN UNIVERSITY, PERTH, WESTERN AUSTRALIA

With the advent of the new academic year, research activities in limnology have continued with rejuvenated vigour. Dr **Luke Twomey** was awarded his Doctorate on nutrient relations in Wilson Inlet and took up a Post-doc position in the university of North Carolina. He is enjoying his life in the USA. **Veronica Campagna** enrolled for a PhD program to work on the limnology of an arid land salt lake sponsored by the Bulong Nickel Mining Company. **Fiona Butson** continues her 2nd year of PhD on diatoms and secondary salinisation. **Erin Low**, another 2nd year PhD student is developing a biomonitoring system for acidic water bodies using diatoms and macroinvertebrates. **Chris Siva, Jane Rosser, Stuart Helleren** have been busy writing up their years of PhD research work for submission.

Michael Payne has been awarded his PhD on copepod culturing. Out of 35 students enrolled for PhD in the Department of Environmental Biology, 13 are engaged in limnological or aquatic research work. Out of 16 new honours students, four are involved in limnological and aquatic science research.

Assoc Prof **Jacob John** has successfully completed a three year research program on a diatom based predictive model for urban stream sponsored by the Urban Water Research Association and Land and Water section of environment Australia. Copies of the two final Reports (1) Diatom Prediction and Classification System for Urban Streams; (2) A Guide to Diatoms as Bioindicators of Urban Stream Health, are available from Information Service, Environment, Canberra. The latter provides the most comprehensive introduction to the study of diatoms – describing both live cell and siliceous wall characteristics – published in Australia.

Assoc Prof **Jacob John** has been elected as the Regional Chairman for the Australian region for the newly formed International Society for Environmental Micropalaentology, Microbiology & Meiobenthology (ISEMM). Please contact **Jacob John** for membership details.

Dr Jacob John

FRESHWATER BIOLOGICAL MONITORING UNIT,

DEPARTMENT OF NATURAL RESOURCES AND MINES (NR&M)

The temperatures in Queensland have started to drop and thankfully our fieldwork component is dwindling. Laboratory work is now in full swing and as a result of our ever-increasing workload three new people have joined us. **Alisha Steward** has joined us after completing an Honours degree at the Botany Department of UQ and undertaking work experience with us for several months. **Andrea Prior** has joined us from Toowoomba where she has also finished Honours , at USQ this time. **Jaye Lobegeiger** has started giving a helping hand to **Glenn McGregor** with his scum samples and taking over some of his fieldwork. **Jaye's** initiation to fieldwork included jumping in at the deep end, literally head first with equipment.

The unit has become involved in a number of projects on top of the normal monitoring. This resulted in a rash of fieldwork for everyone between February and June. Included in this was 5 weeks of fieldwork for 3 of us at a time (along with **Denise Johnson** from State of the Rivers) in the Condamine-Balonne catchment on a project linking flow regime, landuse disturbances and ecology; 3 weeks for 3 of us at a time in the Mary River catchment for an EPA inspired project; **Jon Marshall** went out to the Lake Eyre Basin for 3 weeks sampling bugs in muddy waterholes for the CRCFE Dryland Refugium Project; and at the moment **Diane Conrick**, **Bernie Cockayne** and **Chris Thomson** are finishing off the fieldwork for the latest round of ambient monitoring of sites around the state. It all then starts again in October.

At present the rest of us are working in the lab and at the computer (and working on refining our home brewing skills). Some of us are even glad not to be in the field (for a few months at least). **Andrea** and **Alisha** are currently bug picking and id'ing the samples from the Mary and the Condamine and getting used to the nuances of working for NR&M. **Jon Marshall** is writing up conference papers and project proposals and getting used to not having to work on his PhD on a weekend. **Chris Marshall** is busy finishing the final draft DIBM3 report and listening to tape recordings of what is supposed to be frog calls but in fact sounds like wild camping parties. **Pete Negus** is reviewing ecologically relevant flow statistics. **Glenn McGregor** is busily producing papers to rock the algae world while finishing the backlog of samples (with **Jaye's** help) from all the fieldwork.

Satish Choy has given up being an engineer and is back at Rocklea. However his office is now cramped after being turned into a tea room in his absence.

From: **Pete Negus**

FASTS

FASTS ELECTS AN INTERIM PRESIDENT

Professor Peter Cullen is to become President of the Federation of Australian Scientific and Technological Societies (FASTS) again.

He has been elected by the Board to serve as President until the Council meeting in November 2001. Professor Cullen takes up the position at the end of March.

Current President, Professor Sue Serjeantson has written to the Board to say she will be resigning to become Executive Secretary of the Australian Academy of Science.

Professor Cullen previously served as President from November 1997 until November 1999.

"I am delighted to be able to serve Australian science again as President of FASTS," Professor Cullen said.

"This is an election year, and the level of our national investment in science, research and higher education is coming under question both nationally and internationally."

He said Australia needed bodies like FASTS, to play a strong role in keeping science issues on the national agenda.

He congratulated Professor Serjeantson on her new appointment.

Professor Serjeantson said she was reluctant to leave the Presidency of FASTS at such an important time.

"FASTS and the Academy of Science have an excellent working relationship, and in many ways we are fighting the same battles," she said.

"My new position has a different focus, but our broad agenda on the appropriate level of the Australian investment in science and research are similar."

Professor Chris Fell will begin his two-year term as President of FASTS later this year in November.

OSCARS FOR SCIENTISTS

On March 26, the 33 Australian scientists whose papers have been most-frequently cited by their colleagues are to be honoured at a ceremony in Canberra.

It has been likened to awarding Oscars to scientists.

The event, "Honouring Excellence in Australian Research," will honour 33 highly cited Australian authors, who will be receiving "Citation Laureate" awards. These Australian authors have published more than six high impact or world class papers in their fields.

These highly cited papers document significant research results and then become the foundation of discussion and a resource for other research papers worldwide.

The Awards are being sponsored by ISI, a Thomson Scientific company which maintains the most comprehensive database of research information in the world. ISI is based in the USA in Philidelphia.

Professor Sue Serjeantson, President of the Federation of Australian Scientific and Technological Societies (FASTS) said that FASTS supported the Awards, as one well-established method for measuring excellent science.

The Awards work by counting the number of times a scientific paper is referred to (or cited) in articles and papers by other authors. The more times a paper is cited, the more influential it is.

Professor Serjeantson said that excellence in science can be measured in a number of ways.

"Counting citations is one way, but some excellent work which has not been frequently cited has led to new industries and new jobs, and to ways of improving the environment," she said.

MOST CITED

Here is the list of the 33 Australian scientists whose work has been most frequently cited.

The list, in descending order by number of highly-cited papers.

Professor Graham D. Farquhar
Professor Peter Hall
Dr. Bruce A. Peterson
Professor Donald Metcalf
Professor Ken C. Freeman
Professor Michael A. Dopita
Professor Jeremy R. Mould
Professor Nicos A. Nicola
Dr. Richard N. Manchester
Professor Colin L. Masters
Professor Suzanne Cory
Dr. Paul J. Fraser
Professor J. Malcolm Oades
Professor Bruce A. Stone
Professor Malcolm T. McCulloch
Professor Michael S. Bessell
Professor David R. McKenzie
Professor Donald J. Birkett
Dr. Roger Powell
Professor David H. Green
Dr. L. Paul Steele
Dr. Bruce W. Chappell
Professor Warrick J. Couch
Dr. Jeffrey N. Ladd
Dr. Neil C. Turner
Professor John O. Miners
Professor Matthew V. Vadas
Professor Jerry M. Adams
Professor Barry J. Marshall
Professor Michael V. Swain
Dr. Matthew Colless
Dr. Richard W. Hunstead
Professor Richard M. Pashley

BUDGET FAILS THE MODERN ECONOMY TEST

Australia's peak body for science and technology today (Tuesday) expressed disappointment in the Budget.

Dr David Denham, Vice-President of the Federation of Australian Scientific and Technological Societies (FASTS), said the Government needed to take every opportunity to build upon the measures it announced earlier this year in the innovation statement.

"The science community welcomed Backing Australia's Ability, but as a first step, the beginning of a process," Dr Denham said. "It was a partial solution to the issue of how Australia should invest in our national future.

"This Budget needed to deal with the outstanding issues, like the funding of our university system and CSIRO. At first glance, the Budget has failed to do so.

"Science and research are too important to be decided in the hurly-burly of daily politics. We face the constant danger of the important issues being swamped by urgent but less important matters."

Dr Denham said that Australia is well below the average OECD investment in R&D, and trending downwards.

"The most dismaying fact is the gap is growing larger every day. Other countries see where the future is - why can't Australia?" he said. "We will pay a heavy national price if we continue to neglect science, research and higher education."

Dr Denham said science groups estimated Australia needs to invest an extra $13 billion over the next five years to reach the OECD average. The $13 billion would be split almost equally between the Federal Government, and industry and the State Governments.

The average spend in this area by the world's leading economies is just over two percent of GDP, where Australia is currently spending about 1.5 per cent. It is measured by GERD (Gross Expenditure on R&D) as a percentage of GDP (Gross Domestic Product).

"To reach this target, the Federal Government would have to make an announcement of the size of Backing Australia's Ability ($2.9 billion) every year for the next four years," he said.

He said that it will take a conscious effort to change national priorities if Australia wants to become a competitive modern economy.

"It will require a shift of national resources into areas that will pay the best dividends for Australia," he said. "Australians need to agree, as a nation, that this is where our future lies.

"The low Aussie dollar, the steady drain of our best talent overseas, our slide down international rankings - to a significant extent, all of these can be blamed at Australia's failure to recognise the world has changed."

SCIENCE IS 'NATIONAL UNFINISHED BUSINESS'

Australia's peak body for science and technology will announce tomorrow (Wednesday) that "Science meets Parliament" will be held in Canberra on Wednesday August 22.

Professor Peter Cullen, President of the Federation of Australian Scientific and Technological Societies (FASTS), said he is delighted that science is on the agenda of all major political parties as Australia moves to an election later in the year.

"All parties now recognize that science is one of the drivers that can transform our economy," he said. "'Science meets Parliament' allows MPs and scientists to talk about our national investment in science and research in one-on-one discussions.

"Scientists and Parliamentarians have lots to talk about, and they enjoy each others' company."

Professor Cullen said he agreed with the Prime Minister's statement last Friday that the Government had by no means completed the job of investing in science and technology.

"We have national unfinished business to settle," he said. "Australia needs to think long-term and we need to think big.

"Australians have outstanding issues to resolve, in the resourcing of the university sector and CSIRO, and what to expect back as a national dividend."

Professor Cullen will open a forum at the National Press Club on Wednesday morning. The forum brings together 200 people from science, research, industry and Government, to discuss the implementation of the Government's national innovation plan Backing Australia's Ability.

"We believe the Government has taken a commendable first step in Backing Australia's Ability," he said. "The aim of this Forum is to get the resources in that statement applied as quickly and efficiently as possible.

"We are aiming to flesh out the detail behind the broad statements of principle set out in the Prime Minister's statement of January 29, Backing Australia's Ability."

Professor Cullen said he hoped the community was smart enough to take the ideas and resources in the statement and make them work.

"If so, we have the potential to build something of great importance to Australia in this year of Federation. It should provide a foundation on which to create a more innovative economy over the next century."

R.I.P QUANTUM - ABC HAS NO HEIR APPARENT

Two of Australia's peak science, engineering and technological associations, representing more 120,000 professionals, have expressed deep regret at the passing of ABC-TV's Quantum program, and deeper regret that the ABC Management has not announced plans for similar ABC in-house programming.

The Institution of Engineers, Australia (IEAust) and the Federation of Australian Scientific and Technological Societies (FASTS) today called on the ABC management to declare what firm plans it has to continue to produce high quality science, engineering and technology programs for television and radio.

The Executive Director of FASTS, Toss Gascoigne, said:"For 16 years Quantum had made a valuable contribution to informing Australians of new scientific achievements and we no longer have that contribution to the national interest.

"An important component of that success was based on the trust scientists had in the ABC to report their research accurately, ahead of other program opportunities which would be more likely to rely on sensationalism," he said.

The National Vice-President for Public Policy of the IEAust, Ken Mathers, said:" The ABC management appears to have set cost cutting as a high priority over retaining and maintaining quality assets like the highly respected and trusted expertise of the TV science unit.

"Without maintaining the TV science unit, we can only expect to see more and more outsourcing exercises. Outsourcing has its place, but should not be allowed to replace the national interest." Ken Mathers concluded.

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UNIVERSITY FUNDING: A 21ST CENTURY MIRAGE?

There is increasing concern within scientific circles that hopes of much-needed investment in the university sector is receding in the face of domestic political pressures.

The President of the Federation of Australian Scientific and Technological Societies (FASTS), Professor Sue Serjeantson, said that sudden economic downturn and new spending measures by Government have added to anxiety in the sector.

"The science community appreciates the measures in the Innovation Statement announced by the Prime Minister of January 29," said Professor Serjeantson. "We described it as a useful first step, and it does set Australia on a path.

"But we need other steps to be taken, and the first is restoring core funding to the university sector. The situation has been deteriorating over several years and needs a long-term commitment.

"We have been pinning our hopes on new announcements in the Budget in May. Now it seems that Australia's future as a modern economy is being placed in jeopardy by political pressures.

"As the projected Budget surplus recedes, where does that leave the universities and Australia's long-term future?"

She said the health of the university sector, in its dual roles as a research and training body, was under increasing strain.

"The Government has placed huge pressure on the sector without providing any real solutions. The sector is subject to increasing expectations without being provided with the resources to meet these expectations.

"It would be useful, for instance, to have broad national agreement on what Australia expects of its university sector, and base the level of funding on this role. How many universities do we need, and how should we share scarce resources between them?"

She said that this sort of discussion is best led by Government.

Professor Serjeantson said she had written to the Leader of the Opposition, Mr Beazley, asking him to release details of his plans for science, research and the universities.

"This would widen the discussion. We need a mature and intelligent debate about how science and research are going to fit into our national priorities," she said.

A POSTCARD FROM THE FREE MARKET

JUST STOP IT AND OTHER LESSONS FROM THE REAL WORLD!

In the first instalment of the postcard from the Free Market way back in 1998, I suggested that one of the major drawbacks of being a lone consultant was the lack of access to libraries and up to date information on what is being published and what work is going on out there. It is here that the ASL Newsletter is so valuable. A quick read of the Prattle (or whatever the title of the current issue is) column, and I pretty well know what is being done around the country, and who is doing it. However, as valuable as this is, often the entries are simply relayed as "Steve Stonefly has completed his work on environmental flows in the So-and-so River and has submitted the final report" (also often associated with comments on Steve's subsequent sobriety and social activity).

While being happy for Steve, one is left none the wiser as to what the results were, what the implications are, and where you can get a copy of the report. And the ASL Newsletter comes out every three months which, while faster than normal publication times, still means that the information can be months old.

It is here that the electronic media comes into its own. With access to list servers, regular checking of some Internet sites, and free electronic newsletters (LawnInfo comes to mind), the lone consultant can keep on top of what is going on.

List servers are one of the best. There are a number of these going around and I subscribe to many of them (ASL, ICM etc). They are immediate and very current. If there is a talk or workshop coming up, I can be informed in time to organise to get to it.

The other day I received an e-mail from a list server about an upcoming workshop. The text of the e-mail identified the workshop title, time and place and had information about the speaker and the content (it was actually about a presentation of little interest to me in a far away place). Fine, but it also came with an attachment. The attachment was 1.9 Mb big. Now, not all of us who subscribe to list servers work for universities or governments who have remote servers to collect e-mail and then instantaneously make it available. Not all of us have super gee whizz cable internet connections.

The attachment took about 15 minutes to download from my ISP server, down the phone line and onto my hard drive. Then the same message came from a different list server with the same attachment. Another 15 minutes when my phone line was occupied. Another 15 minutes of paying for my ISP connection (I use an hourly rate as it is cheaper than a monthly fee).

And the attachment – well, it was a flier with coloured graphics and photos and logos of the supporting partners and even less text than came with the e-mail (it only identified the workshop title, time and place). Both copies of the attachment were consigned to the trash (and I filed away the name of the sender in the "mongrels" section of my brain).

Lesson 1: Don't send attachments to a list server. Either put the information in simple text in the body, or direct the reader to a web site, or post it on the ASL web site and direct the reader to that.

Lesson 2: We are not all impressed by fancy graphics and photos. I won't turn up to something just because there is a pretty flier.

Any one who has a TV and has 5 minutes to spare should tune in and check out *Big Brother* on Channel 10. I say 5 minutes to spare, because I am sure that is about the endurance limit of a sane mind watching this show.

Lesson 3: The words "vacuous" and "puerile" are good examples of a pre-adaptation. They were invented long ago, but have waited until Big Brother came along to be truly defined.

But the whole genre of reality TV has given me an idea. I am current trying to convene an expert group for one of the projects I am working on (Attachment C of Part B of the contract says I can't tell you about it). Expert groups are wonderful things. Get 6 recognised experts in the field together in a room and don't let them out until they agree with you (I think that's how they work – I'll let you know). But trying to organise 6 people to get together is hell. Send the e-mail:

"I suggest we hold the first workshop on June 6" The replies are:
E1: "Fine" (E1 is Expert Number 1)
E2: "Fine"
E3: "Fine"
E4: "Fine"
E5: "Fine"
E6: "Sorry, I will be in Canberra that day at some meeting or another"
"OK, how about June 7?"
E1: "Fine"
E2: "Fine"
E3: "Sorry, I will be in Canberra that day sorting out a response to E6 the previous day"
E4: "Fine"
E5: "Fine"
E6: "Fine"
"No worries, what days out of June 8, 9, 10, 11, 13, 14, 15 would suit everyone?"
E1: "8, 9, 10, 11, 13, 14"
E2: "9, 10, 11, 14"
E3: "8, 10, 11, 13, 14"
E4: "8, 9, 11, 14"
E5: "8, 9, 10, 14"
E6: "8, 9, 10, 11, 13" (Don't bother going through it, there is no one date that is common!)

And so this goes on for a while, backwards and forwards until we finally get a date some time in mid September that is common. Well after the project deadline.

So I propose we adopt the reality TV answer to such things. Before each workshop we will take a vote of the experts and eliminate one – the weakest link (do it before the workshop, so they will all be keen to come to it – if you do it after the first one, you will have to wait until September). The potential loss of income and expert status may well turn the representatives into willing participants.

Lesson 4: Expert groups and panels – expect trouble!

And finally, as one who, in the distant past, co-edited the ASL Newsletter, I want to thank and commend Ivor for his work over the past few years. It can be fun, everyone knows your name and you have first access to all the up-to-date information on what is going on in the Australian

Limnological world. And you have the power of the editor. But, it can be hard work. I can still remember stuffing newsletters into envelopes, putting sticky addresses labels on them, bundling them up into postcode or mail centre piles and delivering them to the Heidelberg Post Office. Of course, young people today have got it easy – someone else does all that for you (insert standard tirade about the good old days being better, hard work being good for you ... .).

Lesson 5: **Well done Ivor! You have provided big shoes** *(quite small for my size actually, size 8-9 - Ed.)* **to fill for the next editor.**
Lesson 6: **Being editor can be fun and rewarding. Volunteer! (Ignore this lesson if the next editor has already been chosen).** *(Too late, next Editor chosen, take a number - Ed.)*

ARTICLES

LAKES SORELL AND CRESCENT REHABILITATION PROJECT, INLAND FISHERIES SERVICE – TASMANIA

Background

Lakes Sorell and Crescent are large, shallow freshwater lakes located at 800m AHD, south-east of the Central Plateau in Tasmania.

In 2000, the Inland Fisheries Service successfully secured both State and Commonwealth (NHT) funding to implement on-ground works and formulate management options to address the recent environmental decline in lakes Sorell and Crescent. The key problem associated with the lakes is low water levels due principally to prolonged drought conditions and competition for water by various users. As a result, there has been a decline in water quality, drying-out of adjacent wetlands and loss of habitat for the golden galaxiid and macroinvertebrates.

Work is currently being undertaken in five key areas to address these environmental issues:

1. Water Quality
2. Wetlands
3. Aquatic Fauna
4. Water/Catchment Management
5. Ecological Modelling

Other components of the rehabilitation project also include the continued control and eradication of the European carp (*Cyprinus carpio*), which were discovered in the lakes in 1995 and population and recruitment estimates of the brown trout (*Salmo trutta*).

Water Quality – Adam Uytendaal

Water quality in the two lakes has dramatically declined over the past 4-5 years. Due to their large surface area and shallow nature, disturbance of the lake bed sediments from wind generated waves appears to be the driving factor governing water quality variables such as turbidity, nutrients and algal concentrations. The aim is to determine the processes controlling water quality, set future water quality goals and develop guidelines for managing water in both lakes to restore water quality. Specific objectives include:

- To accurately determine the nature of the problem, variables and processes responsible for increased turbidity and light attenuation.
- To describe and monitor phytoplanton and zooplankton community characteristics over time
- To develop, calibrate and validate a model relating lake levels and extent of sediment resuspension
- To estimate loads of phosphorus and suspended sediment from major sub-catchments, and determine imports and exports of phosphorus and sediment from the lakes to develop nutrient and sediment budgets

Wetlands – Danielle Heffer

There are five large wetlands associated with lakes Sorell and Crescent including the Interlaken Lakeside Reserve which is listed as Ramsar and in the 'Directory of Important Wetlands in Australia' and Kemps Marsh which is also listed in the directory.
This part of the project focuses on four areas of research, which address some of the threats impacting on these wetlands:

- Distribution and abundance of wetland macrophytes species
- Viability of the seed banks and the effect of water regime on seed germination
- Effects of varying water levels on the growth of macrophytes
- Effects of grazing by livestock on wetland vegetation communities

Answers to these issues will assist in the future conservation and management of the wetlands. Actions are also being taken to assess the Crown Land wetlands to determine if they can be given State Reserve status to ensure that they are protected in the future.

Aquatic Fauna – Scott Hardie

The recent low water levels in lakes Crescent and Sorell have caused a significant deterioration in water quality and also a loss of in-lake and littoral, rocky and macrophyte habitats. These alterations to the lakes are thought to be having significant impacts on the biological communities of the respective ecosystems. Biota thought to be of particular importance to the functioning of the systems and of high conservation value, are the macroinvertebrate communities which include the endemic hydrobiid gastropod (*Austropyrgus* sp.) and the endemic and highly 'restricted' and 'rare' fish, golden galaxias (*Galaxias auratus*).

Macroinvertebrate communities and golden galaxiid populations are being studied to:

- Determine their current status
- Determine the effect of lake level
- Identify threatening processes
- Establish future long term monitoring regimes

Several studies based on the ecology of the golden galaxiid are also being undertaken to:

- gain an understanding of the life history and population structure of golden galaxiid in lakes Crescent and Sorell,
- Assess the distribution of the golden galaxiid across lakes Crescent and Sorell and within Clyde River catchment,
- Perform population abundance and biomass estimations of the golden galaxiid in lakes Crescent and Sorell,
- Assess the feasibility of breeding the golden galaxiid in captivity,
- Determine if competition for food resources occurs between golden galaxiid and juvenile brown trout (*Salmo trutta*).

The information gained from these studies will help conserve the aquatic fauna in lakes Crescent and Sorell in relation to water level management.

Water/Catchment Management – Jenny Deakin

The water resources of lakes Sorell and Crescent, and the River Clyde, are in demand from a wide range of competing users. These include irrigation, carp management, recreational trout anglers, Council (town water, fire fighting), adjacent land owners (domestic use and stock watering), and State and National Reserves. Available water resources have decreased over the last few years during the drought period, and there are now increasing pressures on the system.

The development of management plans which will provide a framework for sustainably and equitably managing the natural resources in the future, is an important part of the overall rehabilitation project. Water management plans are being developed for the lakes and for the Clyde River under the Tasmanian Water Management Act (1999). The plans will set out a series of operating rules for the system which will balance the needs of the environment with needs of the local community.

A catchment management plan is also being developed for the lakes' catchment area, which will incorporate the broader natural resource issues and include the water management plan. Community consultation is a critical component of the development of both plans.
Information from the three previous components of the project will contribute to the development of these management plans.

Ecological Modelling

Further funding is being sought to develop a strong conceptual framework encompassing all significant biotic and abiotic pathways present in the lake ecosystem (refer to Fig 1.). In order to understand how the systems may behave when water levels are restored to an optimum level at which resuspension of sediments is reduced, the importance of trophic interactions, need to be determined.

Development of a workable model will ideally provide a predictive tool capable of being used to manipulate various variables, which may be forcing the ecosystem, such as trout recruitment. Ultimately, a switch in alternative stable-states from a phytoplankton dominated turbid state (undesirable) to a macrophyte dominated clear water state (desirable) is to be achieved.

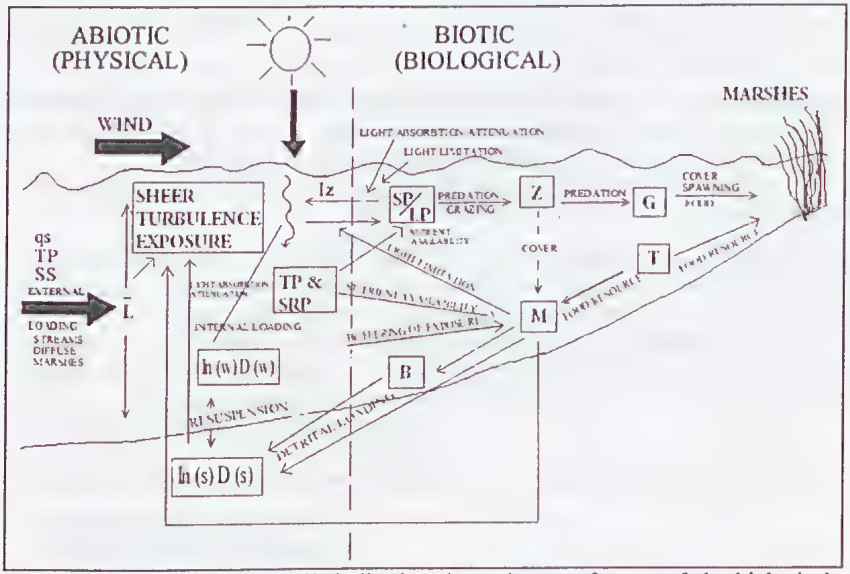

Fig. 1. The 'ecosystem model', indicating the pathways of some of the biological and physical interactions.

To develop the ecosystem model, the following variables need to be determined:

- Trout density
- Galaxiid density
- Grazing pressure on zooplankton
- Phytoplankton biomass and composition
- Nutrient loading on the system

For further information, please contact the relevant project officers or John Diggle, Project Manager, at the Inland Fisheries Service on 03 – 6233 4140 or visit our website at *www.ifs.tas.gov.au*.

FEDERATION OF AUSTRALIAN SCIENTIFIC AND TECHNOLOGICAL SOCIETIES - NATIONAL FORUM

The Innovation Plan – making sure it Works

(Abbreviated) SUMMARY

WELCOME: Prof Peter Cullen – President FASTS

Professor Cullen welcomed the registrants to the sell-out forum. He stated that the nation's natural resources were no longer enough to pay our way and that science, in its broad definition, had to be the key driver of the economy. The low dollar reflected our current value in the world. The Government's Innovation Action Plan, *Backing Australia's Ability* (*BAA*), was the first step in developing a healthy, knowledge-based economy. This forum had been called to help implement *BAA*, and not to complain about what is not in it. Three themes had been chosen for the forum; *The CRC Program*, *Developing Australian Skills*, and *The Centres of Excellence*. Professor Cullen also announced that the 2001 *Science Meets Parliament* will be held on 22 August.

A summary of current action to implement *BAA* was given. Expressions of interest for Major National Facilities had been received and the first round of applications for the ARC's Federation Chairs had been initiated. Criteria for the awarding of the 2000 new university places had been issued and bids were due by 18 June. Consultations were currently being made with stakeholders on pre-seed funding, tax reform, the expansion of the CRC program and guidelines for the biotechnology funds. Longer term issues that needed to be addressed included the Government seeking advice on the critical needs to commercialise, how to increase philanthropic behaviour and getting the message though to the younger generation.

SESSION 1: THE CRC PROGRAM

Chair: Dr David Denham – Vice President FASTS

Mr Steve Irwin, General Manager, S&T Policy Branch, ISR

BAA brought an extra $227 million over the next three years to the CRC program, bringing the total investment to $947 million over the five years to 2006. Advice was being sought as to how the extra funds should be used including:

- Larger indivdual grants
- More CRCs
- Accommodation of small to medium enterprises (SMEs)
- International collaboration

The CRC Committee has proposed

- An incorporated model with shareholder culture
- A board generated from shareholders with limitation on size to about eight
- More flexibility for operation with flexible in and out (venture capital, SMEs)
- SMEs could access through specific projects.

It was noted that incorporation may not be appropriate for all CRCs especially the "public good" centres.

Dr Ian Chessell, Chief Defence Scientist, DSTO

Defence is currently a core member of eight CRCs and was currently reviewing the benefits of involvement. Benefits included leverage, interaction with industry, specialised training, commercialisation of DSTO research and cross fertilisation of ideas. Dr Chessell supported both an

increase in the number of CRCs and larger individual grants; and suggested an affiliates program for SMEs.

Prof Michael Barber, Secretary-elect (Science Policy), Academy of Science
Professor Barber noted that every Government $1 invested in CRCs currently leverages $3.70 from the other stakeholders. He questioned whether the extra $227 million would leverage another $1 billion from a community that had reached close to its capacity. He asserted that the cost of commercialisation was out of balance with the cost of R&D. After ten years of the CRC program, he strongly suggested that a change of approach was needed.

Discussion

There was general agreement that the CRC program had been successful to date but that changes were now needed. There was majority feeling that a higher level of funding for individual CRCs was a priority as leverage capacity had been reached and that the costs to stakeholders were bordering on the uneconomic.

There should be more flexibility in the program to accommodate SMEs including flexible in and out of a centre, project specific roles and assessment of commercialisation.

Suggestions for areas of investment of the extra funding were larger grants, SME involvement, pre seed funding, commercialisation, public relations and internationalisation.

A number of suggestions were made with respect to benchmarking and evaluation, with timing ranging from establishment of the centre to long term.

Internationalisation was equated to globalisation but warnings about the safeguarding of IP were raised.

There was a divergence of opinion on the need for incorporation. Points in favour included more structured reporting mechanisms and safeguards, commercialisation of CRC IP and more comfortable interactions with industry. Points against included higher administrative and legal costs, industrial relations requirements and competition between the CRC and industry partners for commercialisation of products.

A review by CSIRO of the fifty CRCs in which it is involved showed that the effectiveness of a centre was independent of its management structure. Key factors for a successful CRC were the abilities of its CEO, independent chair and board, and the goodwill generated.

There was a strong feeling that considerable flexibility in the CRC program was now needed.

SESSION 2:
DEVELOPING AUSTRALIAN SKILLS – 2000 UNIVERSITY PLACES

Chair: Dr Ken Baldwin, Chair of FASTS' Policy Committee
Dr Michael Gallagher, First Assistant Secretary, Higher Education Division, DETYA
Guidelines recently announced for bids for 2000 new university places in 2002. Pipeline effects will result in 5500 new places after four years. Places aimed at implementing *BAA* and so can be associated with the enhancement of science and technology skills in any area. For example, bids for places for the training of science, maths and IT teachers would be appropriate as would other fields such as commerce and the arts that contain elements of science and particularly IT. Applications are due on June 18. The decision on the allocation of places will be made by DETYA in consultation with ISR and DOCITA. Dr Kemp will announce the outcomes at the end of July. An evaluation of

each program on the basis of its application will be made after five years, as well as monitoring on an annual basis as part of the profiles process.

Dr Carolyn Allport, President, National Tertiary Education Union
Dr Allport called for an increase in public investment in public education to stop the increase in student-staff ratios and reverse the trend in casualisation of staff. She mentioned that applications and participation rates in some science disciplines were falling. She suggested that new courses should be developed using lateral thinking and include outreach. New courses had to be designed to meet industry skill needs and short courses for graduates should be developed. She called for funding and strategies to lift the participation rate in tertiary education and attention to the HECS rate for science, maths and IT education students.

Professor Ian Chubb, President, Australian Vice-Chancellor's Committee
Professor Chubb reported that the AVCC supported *BAA* as the first step in the recovery of the Australian economy and the tertiary sector. He proposed that a broad view of science and technology be taken when deciding the best areas in which to place the new places. Australia required a more scientifically and technologically literate community with life long learning skills.

Discussion

In the response to a question from the Chair, Dr Gallagher reiterated that the 2000 places were to serve the aims of *BAA*. The places were not specifically for Science Faculties but rather for the science and technology education for relevant areas. He claimed that employment in the science market is saturated. It was pointed out that there is clear evidence that this is not the case (eg report of the Australian Council of Deans of Science); and there are already shortages of suitable graduates in areas such as biotechnology, ICT, maths and nanoscience.

Professor Chubb remarked that the universities are restricted by "the number of students who present". He believes that we are charging students too much, that the algorithm for allocating funds on the 1988 basis is outmoded and not working, and that the whole system needs a complete rethink.

Teacher education in areas of science, maths and IT needed to be a priority. The need to attract elite students to SET courses was emphasised so that the nation would have a skilled work force able to work at the cutting edge. Retaining students in science was a priority and the loss of students related in many cases to their lack of preparation for tertiary science and technology training. The lack of funding to universities, and the methods used to allocate funding in institutions mitigated against cross department cooperation and initiatives. Rewards or incentives for cross department activities for the delivery of core material and multi disciplinary training was suggested.

SHORT ARTICLES

FEDERAL COMMITTEE PROPOSES ENVIRONMENT LEVY

The House of Representatives Standing Committee on Environment, Recreation and the Arts has proposed that an environment levy be introduced through the income tax system to contribute towards the ecologically sustainable use of Australia's catchments. The proposal is one of 26 recommendations put forward unanimously by the Committee after its 18-month inquiry into the management of Australia's water resources. The Committee suggested that a tax levy, similar in operation to the levy introduced for the `Guns Buyback' scheme but dedicated to achieving ecologically sustainable land use, would be acceptable to Australian taxpayers.

SALINITY AERIAL MAPPING SET TO START

The Federal Department of Agriculture, Fisheries and Forestry has called for tenders for the national aerial magnetic survey, or the Ultrasound of the Earth program, which is to be funded by the Commonwealth under the National Action Plan for Salinity and Water Quality. The program is the first activity of the Action Plan to get under way, with a grant of $5 million raised from the current Commonwealth Budget.

SALINITY TOOLS WEBSITE

The National Dryland Salinity Program has launched a new website for the Murray-Darling Basin Commission Tools project, which aims to assemble and provide information about salinity management acquired from regional, state, national and international salinity programs. Sources of information include Agriculture Fisheries and Forestry Australia (AFFA) R&D programs; Cooperative Research Centres; CSIRO research programs; Environment Australia programs; the MDBC Strategic Investigations and Education Program; the National Dryland Salinity Program; the National Land and Water Resources Audit Program; Rural Research and Development Corporations; state land and water management agencies; and R&D programs throughout Australia. The website is www.ndsp.gov.au/salinity/tools/home_fs.

SLOW PROGRESS ON SALINITY ACTION PLAN

The National Action Plan on Salinity and Water Quality continues to make slow progress, with negotiations continuing between the Federal Government and the NSW and Western Australian Governments over the structure and responsibilities of regional bodies in implementing the Plan. There have been no new signatories to the Intergovernmental Agreement (IGA) since Queensland, South Australia and the Northern Territory signed up, although Victoria has indicated its willingness

to sign. Working groups are undertaking a range of projects for consideration and approval by the High Level Group on Natural Resource Management. These include the preparation of an interim framework for standards and targets which has now to be considered by each state/territory government for formal agreement by the High Level Group. Governments are also considering criteria developed Accreditation Criteria Working Group under which each state and territory government would be required to assess and accredit regional plans.

NATIONAL BIODVERSITY PROPOSAL FLOATED

Local Government environment group, Environs Australia, has proposed a major national biodiversity capacity building project to the Federal Government. It aims to increase the effective role in biodiversity planning and preservation, and help to maximise outcomes from the National Heritage Trust program. Environs' proposal sets out a milestone framework that provide incentives for councils to be active in rebuilding and protecting their biodiversity.

CANADA'S FRASER RIVER SALMON RUN IN"GRAVE DANGER":

The continued early migration of Adams River sockeye has fishery biologists worried that the "world's best-known salmon run is heading toward extinction" says the 25 April issue of the Vancouver Sun. Last year the 50% point in the upstream migration occurred on 16 August, six weeks earlier than usual. The early migration pattern is exposing the run to a "deadly mix of lower water flows and higher than normal water temperatures" that increase the risk of both disease and mortality and may be an indication of larger ecosystem problems, including changing global climate conditions. The Pacific Salmon Commission is prepared to close the entire Fraser River fishery this year in an effort to conserve what's left of the Adams River sockeye run, according to the article. Since the Fraser River is Canada's largest salmon producer, such a closure would be devastating to British Columbia's commercial salmon fishery.

INTERSTATE WATER TRADING EXPANDED

The pilot Interstate Water Trading system operating in the Murray-Darling Basin is likely to be overhauled to allow public disclosure of traded water prices and the enforcement of environmental plans following CSIRO's review of the project. The country's first review of permanent interstate water trading has revealed an urgent need to improve State licensing systems and administration, increase understanding of exchange rates between trading areas and identified potential negative salinity impacts from trading. The Murray-Darling Basin pilot project has allowed 51 trades involving 9.5 GL of water to move across the borders of SA, Victoria and NSW, with the trades collectively worth over $9.9 million.

NEW MURRAY RESOURCES

A $10 million fish weir for the Hume dam, action to reduce cold water impacts on fish options and new interstate water accounting procedures are among a range of initiatives announced by the Murray-Darling Basin Commission following its latest meeting. The moves are aimed at improving the environmental condition of the River Murray. The commission had committed $10 million to a five year program to construct fish passages on all weirs between Hume Dam and the sea and was also investigating options for reducing the negative impact of cold water releases from Hume Dam on native fish populations downstream.

SUSTAINABILITY CRITICAL: PRODUCTIVITY COMMISSION

A new statutory duty of care and trialing of an auction system to test the financial commitment of land-holders to public good conservation have been suggested as a multi-pronged solution to biodiversity in a Productivity Commission discussion paper. The Commission's staff research paper, Cost Sharing for Biodiversity Conservation: A Conceptual Framework, discusses the principles for sharing the costs of conservation between individuals, groups and the general community, and suggests clarifying land-holders' property rights or their 'duty of care' for the environment as an important first step.

COASTAL WETLANDS PROTECTION PLAN

Environment minister Robert Hill has launched a new planning document for adoption by 16 of Sydney's local councils to protect the city's 300 wetlands but which he has lauded as a possible national model. The Protecting Wetlands plan, which was developed by the Sydney Coastal Councils Group, maps the city's wetlands for the first time and provides a consistent planning document which can be adopted by all Sydney metropolitan councils to provide legal protection for the city's wetlands. The plan, when fully adopted by councils, is aimed at ensuring threats to Sydney's remaining wetlands, such as stormwater run-off, weeds, 4WD's and trail bikes, are properly managed by local councils. The plan came under the auspices of the Coastal and Marine Planning Program, funded under the Trust's $141 million Coasts and Clean Seas See the website at www.environment.gov.au/marine/coast_clean_seas/

MTBE - COULD BE CONTAMINATING OUR WATERS SOON

The Federal Government, in a follow-up to the Fuel Quality Standards Act 2000, is considering whether importation of petrol containing the additive MTBE should be allowed.

There is substantial, well documented evidence that the use of petrol containing MTBE has led to water quality problems (more information on MTBE is attached below)

The problems have arisen in surface waters where recreational boats with outboard motors are used. Recreational lakes may be a source of drinking water. (If it is in your area, this may be a very good point to elaborate on).

Groundwater contamination has occurred in a number of places, resulting in the water source either being made unavailable as a water source without very expensive remediation. (If your area relies on groundwater supplies, point this out to your local contacts).

Areas where MTBE has been used have banned, or are considering banning, its use and agencies and institutions that have studied the issue extensively have concluded that it should be withdrawn. (There are a number of different sources referenced on our web page).

Environment Australia concluded that "based on the concerns surrounding the use of MTBE, in particular its potential to contaminate surface and groundwater supplies, the Commonwealth proposes to prohibit its use in all grades of Australian petrol". (This quote is taken from an article in the Australian Financial Review, 2-3 June, p 28, and is attributed to a report done prior to the consideration of the Act in November 2000 entitled "Setting National Fuel Quality Standards").

The current level of debate appears to lack consideration of environmental issues and be centred solely on competition issues -- in this case protection of independent retailers.

The environmental hazards associated with this decision have potentially several cost implications.

MORE INFORMATION:

more info on the Federal government's views on MTBE at
http://www.environment.gov.au/minister/env/2001/mr8may01.html

or visit the awa website at
http://www.awa.asn.au/news&info/h2oInfo/MTBE.asp

WHO TO CONTACT:

Ideally, someone you have some sort of established relationship. In the absence of any personal connections, your local federal member. (http://www.aph.gov.au/house/members/index.htm) If you have any media connections, consider informing them about the issue. If you feel particularly proactive, the federal Ministers involved are:

Hon. John Howard, Premier
Hon. Peter Costello, Treasurer, ministerial@treasury.gov.au
Hon. Nick Minchin, Minister for Industry, Science, Resources, senator.minchin@aph.gov.au
Hon. Warren Truss, Minister for Agriculture, Fisheries and Forestry, W.Truss.MP@aph.gov.au
Hon. Robert Hill, Minister for the Environment and Heritage, S.Stone.MP@aph.gov.au (Sharon Stone, Parliamentary Secretary)

<the extract below taken from http://www.ea.gov.au/epg/fuel/paper2a.html >

4.3.6 MTBE (Methyl tertiary-butyl ether)

Use

MTBE is the principle oxygenate and octane enhancer used by refineries worldwide due to its compatible blending properties and lower cost. It is described as an oxygenate - an oxygen-bearing additive used to reduce engine knocking and assist gasoline burn more cleanly.

World production capacity of MTBE is 21 Mt per annum, with a further 7 Mt per annum of capacity in construction or in planning. It is widely used in Europe, the US and the Far East. Australian domestic refineries do not use MTBE, however it may be present in occasional batches of imported petrol.

MTBE has been prohibited in petrol supplied in Western Australia and Queensland due to potential water contamination concerns (see below).

Experience in the US

The US Clean Air Act Amendments, introduced in 1990, attempted to reduce air pollution from the transport fleet by mandating the specifications of gasoline, called 'reformulated gasoline' (RFG). Among other things, this managed the oxygen content of gasoline (at 2%) in areas with severe air pollution. The addition of MTBE to gasoline at approximately 10-15% was identified as being able to assist in meeting this specification, which resulted in an enormous increase in demand for the product.

After the introduction of RFG, MTBE started to be detected in ground water in several states (eg California and Maine), with the primary source of contamination from leaks or illegal drainage from underground gasoline storage tanks and distribution pipes. Surface water was also contaminated through older recreational watercraft operating on lakes and waterways.

While the majority of MTBE water contamination in the US was detected below the levels for public health concern, MTBE can be detected by taste and odour at extremely low levels, ie less than 20 parts per billion (ppb). It is reported that water authorities in the US are even likely to shut down contaminated water sources at the 5 ppm level (Keller et al, 1998).

In response, the US EPA appointed the Blue Ribbon Panel in November 1998 to investigate air and water quality issues relating to the use of MTBE. The final report was issued in September 1999, with the following pertinent recommendations:

* that MTBE should be substantially phased out of gasoline in the US; and
* in order to facilitate the phase out, the 2% limit on oxygenate level in RFG should be waived.

Following findings and recommendations of an MTBE assessment performed by the University of California, MTBE was declared as "an environmental risk to California" in March 1999. At that time, Californian agencies were directed to take steps towards eliminating its use in gasoline in California by 31 December 2002. (Air Resources Board, 2000)

Activity is continuing in the US with the US Executive promoting bills in Congress that would lead to MTBE being phased out nationally.

Environmental and health issues

MTBE is known to be soluble in water and is not adsorbed readily on soil particles. MTBE is very slow to biodegrade, with a half life in surface water, estimated to be between 28 and 180 days for aerobic degradation, and in ground water between 112 to 720 days for anaerobic degradation. (RMIT, 1994) MTBE is not expected to bioaccumulate (RMIT, 1994; Spectrum Laboratories Inc).

The literature review and analysis report argues that the controversy surrounding the use of MTBE is a consequence of the failure to properly control petrol transport and storage, and that all oxygenates (including ethanol) are likely to suffer a similar level of concern if they were widely used. However, MTBE degrades significantly more slowly than other octane enhancers.

In addition, the use of petrol containing MTBE in motor boats, in particular those using older 2-stroke engines can result in contamination of surface water (Keller et al, 1998).

MTBE is on the current candidate list for potential assessment as a priority existing chemical by the NICNAS, and some stakeholders have expressed concerns about the potential carcinogenicity of MTBE. However, for the general population, the risk of exposure to MTBE through the ingestion of contaminated water or inhalation is low (Keller et al, 1998).

The use of MTBE in petrol results in decreased vehicle emissions of hydrocarbons and carbon monoxide, with little changes in nitrogen oxides (RMIT, 1994). However, recent research completed by the University of California (Keller et al, 1998) found that MTBE and other oxygenates had no significant effect on exhaust emissions in advanced technology vehicles. Further, there were no significant additional air quality benefits to the use of oxygenates such as MTBE in US RFG relative to alternative non-oxygenated RFG formulations.

Vehicle operability issues

The WWFC considers the use of MTBE acceptable. Ether/petrol blends have no significant effect on vehicle performance (RMIT, 1994).

Effect on fuel specifications

MTBE is compatible with the gasoline blend streams and can be blended along with the other streams within the refinery.

To date, there has been no move to phase out the use of MTBE in Europe with the literature review and analysis report claiming that it is doubtful Europe could adopt the new Euro-3 and 4 standards for aromatics and 95 RON petrol without its use.

The Australian Petroleum Industry members have also expressed some concern that the European standards were developed within a framework of the widespread use of MTBE (at about 10%). However, the literature review and analysis also reports that these members do not favour the use of MTBE in Australia (and have a similar position on TAME and ETBE).

The use of ether additives does not lead to an increase in RVP levels, unlike alcohol additives.

Proposed management

Based on the concerns surrounding the use of MTBE, in particular its potential to contaminate surface and ground water supplies, the Commonwealth proposes to prohibit its use in all grades of Australian petrol.

A maximum content level in petrol of 0.10% v/v will be set for MTBE to cater for contamination of petrol by residual amounts of MTBE blended petrol remaining in storage facilities and/or distribution systems.

While it is accepted that the current controversy surrounding the use of MTBE is generally a consequence of the failure to properly control petrol transport and storage systems, the use of MTBE in Australia poses an unacceptable risk due to the extremely low levels at which it taints ground and surface water supplies.

Environment Australia will review the use of MTBE in Australian petrol if it is assessed as a priority existing chemical by NICNAS.

USELESS FACTS ASSOCIATED WITH WATER

A rat can last longer without water than a camel.

All porcupines float in water.

An iguana can stay under water for twenty-eight minutes.

Basilisks are frequently called Jesus Christ Lizards because of their ability to run on water.

Herons have been observed to drop insects on the water and then catch the fish that surface for the bugs.

One species of antelope, the Sitatunga, can sleep underwater.

The deepest penguin dive was 1261 ft under the water.

The Weddell seal can travel underwater for seven miles without surfacing for air.

A dog's nose is so sensitive that it can tell the difference between a tub of water and a tub of water with a teaspoon of salt in it.

An elephant can smell water three miles away.

The African lungfish can live out of water for up to four years.

A giraffe can go without water longer than a camel can.

Hippopotamuses do eighty percent of their vocalization under water.

Ostriches stick their heads in the sand to look for water.

Lake Nicaragua boasts the only fresh-water sharks in the entire world.

In Italy, a campaign for Schweppes Tonic Water translated the name into Schweppes Toilet Water.

The naked truth: the fable says that the Truth and Falsehood went bathing; Falsehood came first out of the water, and dressed herself in Truth's garments. Truth, unwilling to take those of Falsehood, went naked.

If you had enough water to fill one million goldfish bowls, you could fill an entire stadium.

The average person drinks 800 gallons of water during their lifetime.

The wheat that produces a loaf of bread requires two tons of water to grow.

96% of a cucumber is water.

Carbonated water, with nothing else in it, can dissolve limestone, talc, and many other low-Moh's hardness minerals.

Drinking water after eating reduces the acid in your mouth by 61 percent.

Water expands as it freezes and contracts as it melts, displacing the exact same amount of fluid in either state. So if the northern ice cap did melt, it would cause absolutely no raise in the level of the ocean.

Hot water is heavier than cold.

It's impossible to get water out of a rimless tire.

Less than 2% of the water on Earth is fresh.

There is a tea in China called white tea which simply is boiled water.

Angel Falls in Venezuela is the world's highest waterfall, at 3,212 feet (979 m). (Source: N/A)

The Waimangu (Maori 'black water') geyser, in New Zealand, erupted to a height in excess of 1,500 ft in 1904, but has not been active since it erupted violently at 6:20 A.M. on 1 April 1917 and killed four people.

Famous Hell's Gate is located in the scenic Fraser Canyon of British Columbia, Canada.

The planet Saturn has a density lower than water. If there was a bathtub large enough to hold it, Saturn would float.

The volume of water in the Amazon river is greater than the next eight largest rivers in the world combined.

Blood is six times thicker than water.

Constipation is caused when too much water is absorbed in the large intestine and poops become dry.

Devoid of its cells and proteins, human blood has the same general makeup as seawater.

The average body contains enough: Iron to make a 3 inch nail, Sulphur to kill all fleas on an average dog, Carbon to make 900 pencils, Potassium to fire a toy cannon, Fat to make 7 bars of soap, Phosphorus to make 2,200 match heads, Water to fill a ten gallon tank

Playing cards were issued to British pilots in WWII. If captured, they could be soaked in water and unfolded to reveal a map for escape.

A person uses more household energy shaving with a hand razor at a sink (because of the water power, the water pump and so on) than he would by using an electric razor.

The WD in WD-40 stands for Water Displacer.

That condensed water vapour in the sky left behind by a high-flying jet is a contrail.

Everytime Beethoven sat down to write music, he poured ice water over his head.

Craven Walker invented the lava lamp, and its contents are coloured wax and water.

A can of Diet Coke will float in water while a can of regular Coke sinks.

A seagull can drink salt water because it has special glands that filter out the salt.

ANNOUNCEMENTS

SCIENCE MEETS PARLIAMENT DAY - 22 AUGUST 2001

Dear ASLers, Note it in your diaries! Any chance you are going to be near Canberra at this time or could be? If we are to influence the government positively to improve Australian aquatic environment and promote ecologically sustainable management of our wetlands then there needs to be someone there with wet feet! The more the merrier. You needn't be a god in the field of limnology – politicians are keen to meet our scientific youth. You receive a full days training on how it all happens and previous ASLers that have been have found it a positive experience. See Deb's summary in Newsletter 38#4 Dec 2000 pg 42. Let's get out there and talk to the politicians – make our voice heard!

Cheers, Jane
Pres.

If you'd like more info contact Toss Gascoigne at FASTS
fasts@anu.edu.au or Ph (02) 6257 2891 or
Dianne Flett (at Land and Water)
email: dianne.flett@lwa.gov.au or Ph: (02) 6263 6014

ASL CONFERENCE: SPECIAL SESSIONS

In addition to our normal open forum we are planning a series of sessions grouped by themes. Some special keynote speakers are currently being invited - for updates see the ASL web page!

If you would like more information about these sessions or are interested in contributing to them you may like to directly contact the session organisers. Don't forget: abstracts are due in by the 1st of August!

The sessions will be:

RIVER AND LAKE ECOSYSTEM RESPONSES TO HUMAN IMPACT AND CLIMATE CHANGE
Organiser: Michael Reid, Department of Geography, Monash University, Clayton, Tel. (03) 9905 2939 e-mail: michael.reid@arts.monash.edu.au

ECOLOGICAL RISK ASSESSMENT
Organiser: Mike Grace, CRC for Freshwater Ecology and Waters Studies Centre, Monash University, Clayton. Tel. (03) 9905 4078 e-mail: mike.grace@sci.monash.edu.au

THREATENING PROCESSES: THE EFFECTS ON FISH IN AUSTRALIA
Organiser: Jarod Lyon, Arthur Rylah Institute for Environmental Research, Department of Natural Resources, Victoria. Tel. (03) 9450 8678, e-mail: Jarod.Lyon@nre.vic.gov.au. Students are particularly encouraged to contribute!

APPROACHES TO DESCRIBING UNIMPACTED RIVERS
Organiser: Ben Gawne, CRC for Freshwater Ecology, Mildura Labs, Tel. (03) 5023 3870 e-mail: bengawne@mildura.mildura.net.au

LOWLAND RIVERS
Organiser: Michael Shirley, Sinclair, Knight &Merz, Malvern, Victoria, Tel. (03)
9248 3246,
e-mail: mshirley@skm.com.au

Any other questions regarding the conference please visit the ASL web page (www.asl.org.au) or talk to one of the organisers.

PLANNING TO PRESENT A STUDENT PAPER OR POSTER AT ASL?

Sharing our science is what conferences are all about. Much of the good work is done by our student members, and we encourage all students to present a paper or poster about their findings. ASL recognises that one of its main strengths lies in the continuing high quality of the research done by our students. Therefore, at each annual congress, awards are given for the best student talk and the best student poster. Not only do these reward good practice but they look good on the CV too!

The awards are judged by a panel who apply the criteria set out below. By providing students with these criteria *before* the congress, we hope to help students excel in their presentation of high quality research. The list below will seem daunting but you will see that much of it is probably just common sense. Basically, they are some guidance on the points that the panel feels contribute to an excellent paper or poster. This list may make a handy checklist for *all* presenters.

Spoken paper:

CONTENT (60%)

1. Good science. Is the work a significant and original contribution to limnology? Are the context and significance of the work made clear from the outset? Are aims and hypotheses clearly stated and non-trivial? Is the survey or experiment well planned, adequately replicated, and likely to answer the proposed hypotheses? Is the method described clearly? Are limitations to the study identified where relevant? Are only the key results presented, avoiding distractions by less important results?

2. Logical. Does the talk begin and end in a well-rounded way such that the message is clear, the research question is answered, and the significance of the paper is clear? Is it possible to follow the sequence of events from the beginning of the paper to its conclusion? Is all the necessary information presented in a logical order so that the listener can follow the speaker's reasoning?

3. Results. Are the results credible? Is it clear that the findings result from the phenomenon being investigated and are unlikely to be an artefact of an inappropriate method or poor design? Is the relevance of the results to the broader discipline clear and convincing?

PRESENTATION (40%)

1. Effective visual displays. Has the presenter considered the best way to present the material to maximise its clarity and impact? Is text used sparingly? Are figures and diagrams clear and convey useful messages? Are tables kept to a minimum? Is text an appropriate size and font? (Beware that red-green colour blindness is common – blue and yellow is usually a successful combination in Powerpoint.)

2. Oratory expertise. Is the speaker relaxed and organised? Is the speech audible and articulate, and is jargon used correctly? Does the speaker hold your attention with variations in voice, gestures, and interactions with the visual media? Are there any irritating mannerisms or distractions? Does the speaker seem enthusiastic and professional about the topic?

3. Handling questions. Does the speaker answer the actual question? Are poorly-asked questions handled sensitively?

Poster:

Increasingly, the poster is becoming a preferred medium for scientific communication because it conveys some messages efficiently, is versatile in a variety of venues, and posters can be re-used. As rapid improvements in computer technology and desktop publishing have resulted in some stunning graphic displays, the Panel has struggled to judge posters fairly without being unduly influenced by slick presentations from students with access to facilities that are not available to all poster presenters. Nonetheless, the new technology may be a liability if some fundamental rules of presentation are ignored.

CONTENT (60%)

1. Good science. As in the case of spoken papers, many of these points hold true for posters. Is the work a significant and original contribution to limnology? Are the context and significance of the work made clear? Are aims and hypotheses clearly stated and non-trivial? Is the survey or experiment well planned, adequately replicated, and likely to answer the proposed hypotheses? Is the method described clearly? Are limitations to the study identified where relevant? Are the results clearly presented?

2. Logical. Does the poster lead your eye so that the message begins and ends in a well-rounded way? Is it possible to follow the sequence of events from the beginning of the poster to its conclusion? Is all the necessary information presented in a logical order so that the reader can follow the researcher's reasoning?

3. Results. Are the results credible? Is it clear that the findings result from the phenomenon being investigated and are unlikely to be an artefact of an inappropriate method or poor design?

PRESENTATION (40%)

1. Effective visual displays. Has the presenter considered the best way to present the material to maximise its clarity and impact? Is text used extremely sparingly? Are figures and diagrams large enough, clear, and convey useful messages? Are tables kept to a minimum? Is text an appropriate size and font? Is the background colour and superimposed text and pictures an effective and eye-catching contrast?

2. Succinctness. Most posters have too many words. Of the few words on the poster, are they all needed? Are aims clear? Is jargon used correctly? Is the poster completely self-explanatory?

3. Attractive. Does the poster catch attention? Does it have a catchy title? Is there plenty of space to ease the eye? Does it have useful pictures (rather than 'pretty shots')? Is the text punchy enough with short words used evocatively?

40TH ASL CONGRESS 2001 (IN CASE YOU MISSED IT THE FIRST TIME)

27th September – 1st October 2001

Registration will start in the evening of Thursday, 27th September

Rich River Golf Club Resort, Moama, NSW
(near Echuca, Vic)

First Announcement

Deadline for Abstracts:
Postal deadline: Received by 16th July,
Electronic deadline: Received by 1.August

A special flyer with full information on registration, accommodation, instructions for abstract submisssions will be sent out in early May.

Early bird Registration: before 1st August 2001

Check the next ASL newsletter or the ASL homepage at www.asl.org.au for more details and updates.

Call for Expression of Interest

Special Sessions

(Grouping of papers on themes)

Deadline for Proposals: 6th April 2001

We welcome any suggestions for topics for special sessions. If you are interested chairing and organising such sessions please contact the organisers by the 6th April 2001.

Contact Details:
Conference Program Organisers:
Mike Grace (mike.grace@sci.monash.edu.au)
Michael Shirley (mshirley@skm.com.au)
Sabine Schreiber (sabine@unimelb.edu.au)

Student Travel Awards
Application Deadline: 1. August 2001

Applications are invited from research students for travel assistance to attend and present a paper at the Annual Congress of the Australian Society for Limnology. The purpose of this assistance is to encourage students to present the results of their work in public. Students who are carrying out research in any branch of limnology for a higher degree are encouraged to apply. The following rules apply for assistance:

1. Applicants must be full-time postgraduate students at any Australian University, College of Advanced Education or Institute of Technology. There is no age limitation. Applicants must have current financial membership of the ASL for at least 6 months.

2. Assistance will be granted on the recommendation of a panel of three appointed by the Society.

3. Applications must include a written statement of no more than 200 words describing the research, its significance and the stage that has been reached. This statement must be endorsed by the student's supervisor. An abstract of the paper that the applicant proposes to present must also be included.

4. Award of assistance will be judged on: (I) significance of the work; (ii) originality and soundness of the research; (iii) the progress made and whether the stage has been reached where something useful can be presented; (iv) ability to present a clear and concise statement of the study.

5. Applicants must be lodged with Dr Richard Marchant, Museum of Victoria, GPO Box 666E, Melbourne 3001, by 1.August 2001.

STUDENT PRIZES

At the Annual Congress, there are three student prizes of books (chosen by the recipient) to the value of $100. The prizes are:

1. Prize for the best oral presentation by a Ph.D. or Masters student.

2. Prize for the best poster presentation by a student.

3. Prize for the best oral presentation by an Honours student.

Posters are assessed during the dedicated poster session and must be attended by the author, who will explain the presentation and field questions. There will be no oral sessions concurrent with the poster session.

The Honours prize was felt desirable because for a number of years members have felt that recent Honours graduates are less experienced at oral presentations and are therefore disadvantaged compared with other graduate students who have nearly completed their research. We hope this prize will encourage recent Honours graduates to attend Congresses and share their results with other members of ASL.

To be eligible for a student prize, students should be current, financial members of ASL, and must give their presentation within 18 months of receiving their degree. The student prizes will be judged by a committee or committees convened by the ASL Executive at the next ASL Congress. Wherever possible, such committees will not contain supervisors or Co-authors of candidates for the prizes.

Additionally, a student can win each of the awards only once. Thus a student who has won the PhD award is no longer eligible for that award but would be eligible to submit a poster for the poster award. A student who has won the honours award would still be eligible for each of the other award.

EARTH ALIVE! BIODIVERSITY MONTH AND NATIONAL THREATENED SPECIES DAY – HOW CAN YOU GET INVOLVED?

Earth Alive! Biodiversity Month and National Threatened Species Day 2001 are on again in September. Registration kits are available now.

Biodiversity Month provides a national focus to celebrate and promote your local biodiversity, get the media interested in a local event or on-going biodiversity project, and increase your community's understanding and involvement in biodiversity conservation projects in your region.

This year, Biodiversity Month is being organised with National Threatened Species Day, held every year on 7 September to mark the date in 1936 that the last know Tasmanian Tiger died. It aims to raise awareness about Australia's threatened species and encourage all Australians to get involved in their conservation.

Earth Alive! Biodiversity Month this year will be encouraging the community to get their *'Hands on for Habitat'* and create a garden haven for wildlife.

Many environmental groups and organisations from around Australia will soon be organising events aimed at educating and involving anyone willing to learn about our precious biodiversity. And there's something for everyone to get involved in.

This year the Community Biodiversity Network and the Threatened Species Network have developed a one-stop-shop Biodiversity Month/National Threatened Species Day Registration Kit. The Kit includes a product order form, which enables groups taking part to access a broad range of free education and promotional materials.

To receive a copy of the Kit or for more information contact the Community Biodiversity Network. Ph: (02) 9262 4743, Email: earthalive@cbn.org.au. For more information about National Threatened Species Day, contact the Threatened Species Network on 1800 251 573

Groups can also register events and order products on-line through the Biodiversity Month web site at: www.cbn.org.au/projects/earthalive2001/home.html

Diary Dates
1st - 30th September Earth Alive! Biodiversity Month
Help promote the conservation of Australia's species and ecosystems, and promote your community's conservation activities. This year the Community Biodiversity Network and the Threatened Species Network have developed a one-stop-shop National Biodiversity Month/National Threatened Species Day (7th September) kit. The Kit includes a product order form, which enables groups taking part to access a broad range of free education and promotional materials.

To receive a kit or for more information contact the Community Biodiversity Network. Ph: (02) 9262 4743, Email: earthalive@cbn.org.au or browse 'Earth Alive!' Biodiversity Month at http://www.cbn.org.au/projects/earthalive2001/home.html

It's rubbing soap on Blankets that shrinks and stiffens them

– So go to an ASL pub talk instead

That was the old way of washing, and it was ruinous for woolens.

ASL talks are gentle and pure so they won't harm your delicate clothing.

They are held on the 1st Monday of every Month at :

The Green Room
of THE REPUBLIC HOTEL
(on the corner of Burnett and Elizabeth sts North Hobart)

Dinner is at 6pm, and the talks start at 7pm

The purest ingredients:

Tasmanian ASL Pub talks

July 2 Tasmanian freshwater crayfish: how many species now?

August 6 Ben Nevis logging impact study •Small headwater streams - 20 years after logging

September 3 A regionalisation extravaganza

October 1 Something with a botanical twist...

Even in hard water issues ASL makes wonderful suds.

ASL
Won't shrink woolens!

The next TAS. ASL talk will be: July 2nd

Tasmanian Freshwater Crayfish: How many species now ?

ASL
Australian Society for Limnology Inc.

contact: flatworm@ozemail.com.au

NEW BOOKS

Assessing the biological quality of fresh waters - RIVPACS and other techniques

Edited by John F. Wright, David W. Sutcliffe and Mike T. Furse
Published by The Freshwater Biological Association, Ambleside, June 2000 400 pages

Price £40 softback, £60 hardback (including packing & postage)

This book presents an up-to-date account of developments in predictive bioassessment systems for classifying and monitoring fresh waters, based on macroinvertebrates. It describes in considerable detail developments with the River Invertebrate Prediction and Classification System (RIVPACS) of the UK, the AUSRIVAS programme in Australia, and the BEAST in Canada. Multimetric methods from North America, bioassessment approaches in The Netherlands, Sweden and Spain, and the application of artificial intelligence techniques are all included. The book is based on an international workshop of 59 invited scientists from 23 countries that took place at Jesus College, Oxford in 1997.

For all those who are professional scientists involved in aquatic bioassessment methods or the management of natural and impacted fresh waters, this book is a necessary reference text. Similarly for students wishing to learn more about the use of macroinvertebrates for assessing biological quality of fresh waters, it is an invaluable source of information.

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Editorial preface

Some terms commonly employed by biologists working with RIVPACS

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2.Evolution of statistical methods in RIVPACS (Dorian Moss)

3.Uncertainty in estimates of biological quality based on RIVPACS (Ralph Clarke)

4.Classification of the biological quality of rivers in England and Wales (Brian Hemsley-Flint)

5.Quality assurance and RIVPACS (Robert A. Dines and John A.D. Murray-Bligh)

6.The application of RIVPACS procedures in headwater streams – an extensive and important national resource (Mike T. Furse)

7.The potential of RIVPACS for predicting the effects of environmental change (Patrick D. Armitage)

8.Development of a national river bioassessment system (AUSRIVAS) in Australia (Peter E. Davies)

9.Biological assessment of river quality: development of AUSRIVAS models and outputs (Justen C. Simpson and Richard H. Norris)

10.AUSRIVAS: operator sample processing errors and temporal variability – implications for model sensitivity (Chris L. Humphrey, Andrew W. Storey and Lisa Thurtell)

11.The development of the BEAST: a predictive approach for assessing sediment quality in the North American Great Lakes (Trefor B. Reynoldson, Kristin E. Day and Tim Pascoe)

12.Establishing reference conditions in the Fraser River catchment, British Columbia, Canada, using the BEAST (BEnthic Assessment of SedimenT) predictive model (David M. Rosenberg, Trefor B. Reynoldson and Vincent H. Resh)

13.Selection of benthic macroinvertebrate metrics for monitoring water quality of the Fraser River, British Columbia: implications for both multimetric approaches and multivariate models (Vincent H. Resh, David M. Rosenberg and Trefor B. Reynoldson)

14.Running-water biomonitoring in Spain: opportunities for a predictive approach (Javier Alba-Tercedor and Ana María Pujante)

15.Effects of taxonomic resolution and use of subsets of the fauna on the performance of RIVPACS-type models (Charles P. Hawkins and Richard H. Norris)

16.The 1995 national survey of Swedish lakes and streams: assessment of ecological status using macroinvertebrates (Richard K. Johnson and Willem Goedkoop)

17.Typology of macrofaunal assemblages applied to water and nature management: a Dutch approach (Piet F.M. Verdonschot and Rebi C. Nijboer)

18.New approaches to river quality classification based upon Artificial Intelligence (William J. Walley and Valentine N. Fontama)

19.The multimetric approach to bioassessment, as used in the United States of America (Michael T. Barbour and Chris O. Yoder)

20.The reference condition: problems and solutions (Trefor B. Reynoldson and John F. Wright)

21.Summarising, presenting and interpreting outputs from RIVPACS and AUSRIVAS (Richard H. Norris)

22.Using RIVPACS as a modelling tool to predict the impacts of environmental changes (Niels De Pauw)

23.Using RIVPACS for studies on conservation and biodiversity (Philip J. Boon)

24.RIVPACS and alternative statistical modelling techniques: accuracy and soundness of principles (Richard K. Johnson)

References

Index to scientific names (taxa)

Index to selected topics

Diatoms of Europe

Diatoms of the European Inland Waters and Comparable Habitats. Edited by Horst Lange-Bertalot. Volume 2: Lange-Bertalot, Horst: Navicula sensu stricto, 10 Genera Separated from Navicula sensu stricto, Frustulia. 2001.
140 photographic plates. 526 p. gr8vo. Hardcover. (ISBN 3-904144-78-2) DM 380 (approx. US$ 190)

Contents: Authors foreword and acknowledgments/
1: DIAGNOSES AND DISCUSSIONS OF THE TAXA: Navicula Bory sensu stricto Section I: Navicula (128 taxa)/ Section II: Alinea nov. sect. (22 taxa)/ From Navicula sensu lato separated 10 genera: Hippodonta Lange-Bertalot et al., Craticula Grunow, Geissleria Lange-Bertalot & Metzeltin,Neidiopsis Lange-Bertalot & Metzeltin, Mayamaea Lange-Bertalot, Adlafia Lange-Bertalot, Decussata (Patrick) Lange-Bertalot,Fistulifera Lange-Bertalot, Aneumastus Mann & Stickle, Haslea Simonsen/ Frustulia Rabenhorst/

2: KEYS FOR THE IDENTIFICATION OF THE TAXA: Navicula sensu stricto, Section I: Navicula/ Navicula sensu stricto, Section II: Alinea/ Navicula groupings corresponding to ecological conditions/ Hippodonta/ Craticula/ Geissleria/ Mayamaea/ Adlafia/ Neidiopsis, Decussata/ Fistulifera, Haslea/ Aneumastus/ Frustulia/

3: LATIN DESCRIPTIONS OF NEW TAXA

4: REFERENCES

5: PLATES (with indication of the arrangement of the genera)/ INDEX.

From the author's foreword:

A revision and synopsis of Navicula sensu stricto, another 10 genera previously included in Navicula sensu lato, and of Frustulia. Covers the temperate zone of the northern hemisphere, with emphasis on Europe. The revision however is more general in its coverage of the temperate and colder zones, and includes some remarks on taxa from the (sub-)tropics. Additionally, reference to the diatom floras of the Pleistocene and Neogene (Tertiary) are made. It is very interesting to compare the fossil flora with recent diatom communities. Some species have traversed the several million years to the present, but other species seem to have become extinct, as we have not been able to find them in recent material.

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koeltz@t-online.de, koeltz@attglobal.net,
Internet:
https://www.koeltz.com

INTERNATIONAL SOCIETY OF ENVIRONMENTAL MICROPALEONTOLOGY, MICROBIOLOGY AND MEIOBENTHOLOGY (ISEMMM)

A new International Society of a multidisciplinary nature was born in Winnipeg, Canada in 2000, when a group of scientists from 36 nations met, representing research interests in Micropaleontology, Microbiology and Meiobenthology. This was the second time that an informal group of scientists, whose expertise in using small biota as tools in monitoring environmental changes met under the banner of an International Conference. Their first meeting was in Israel in 1997. Most of the participants were already active in research on 'small animals' and Protista: Foraminifera, Copepods, Ostracods, algae, fungi, pollen and spores, bacteria etc. They were convinced that there is a need to form an International Society to exchange in formation on the use of their 'pet organisms' as tools to gauge environmental changes.

Prof Valentina Yanko-Hombach was elected as the President of the society and a number of Vice Presidents were selected to represent the various geographical regions. The objectives of the society are:

(1) to bring together specialists with biological, geological and agricultural background for the development of interdisciplinary environmental research via collaboration, discussion and learning from each other for the benefit of the environment, human health and welfare;
(2) to promote innovative multidisciplinary research in recent and fossil micro- and meioorganisms dedicated to solving environmental/paleoenvironmental problems in the fields of environment, human health and welfare;
(3) to encourage education, research and any other means of advancing knowledge in any aspects of Environmental Micropaleontology, Microbiology and Meiobenthology that the ISEMMM may think desirable;
(4) to arrange lectures, short courses, seminars, relevant to the pursuit of the Environmental Micropaleontology, Microbiology and Meiobenthology;
(5) to introduce the utilisation of micro- and meioorganisms to a broader audience and to bridge this gap between science, industry, national governments, and international organisations;
(6) to promote public knowledge about contributions of the Environmental Micropaleontology, Microbiology and Meiobenthology to human welfare and to serve the public need for expertise in all areas in which those sciences are relevant.

I believe this society will be a useful platform for macroinvertebrate and Meiobenthos, diatoms, copepod specialists as well as palaeontologists and microbiologists of Australia as they all are united by the common goal of determining and predicting environmental change by the use of biota as tools. Very seldom, the various specialists meet to share their research findings, in a common platform as they all belong to their 'own' societies. Therefore, the new International Society ISEMMM welcomes all interested experts and their students to join the society. The next conference of the society will be held in Vienna, Austria September 1-6, 2002.

I extend an invitation to all interest in joining the society to contact me for details and an application form. Associate Professor Jacob John (Vice President ISEMMM, Chairman Australian Region) Department of Environmental Biology Curtin University of Technology GPO Box U 1987 Perth 6845 Phone: 08 9266 7327 Fax: 08 9266 2495 Email: RJACOBJO@cc.curtin.edu.au

NINTH WORLD LAKE CONFERENCE IN JAPAN, NOV. 2001

I would like to draw you attention to the forthcoming ninth World Lake Conference to be held in Japan in November this year. This is the latest in the series of conferences sponsored by ILEC (International Lake Environment Committee), all of which specifically target the management and conservation of lakes and reservoirs rather than broader limnological topics. I have attended most and found them very well worthwhile. The deadline for submissions is the end of this month and full details of registration, copies of the registration forms, the conference programme and other details can be obtained from the web site of the conference: <http://www.biwako2001.com>

Papers given at the conference (after peer review) may be published in the journal of ILEC: "Lakes and Reservoirs: Research and Management" published by Blackwell Science.

With best wishes

Bill Williams
ILEC Scientific Committee member.

CRAYFISH HOMEPAGE

http://bioag.byu.edu/mlbean/crayfish/crayhome.htm

Maintained by the Monte L. Bean Life Science Museum at Brigham Young University, the Crayfish Homepage serves as an organizational metasite through which users may link to in-depth information on Crayfish identification, phylogeny, species lists, conservation, bibliography, and photographs. In addition to making information on crayfish accessible, the homepage provides lists of scientific societies that study crayfish, as well as links to crayfish-related and other crustacean sites. A Latest News feature highlights current news items of relevance to crayfish science and conservation. [LXP]

CONFERENCE CAPERS

Ninth International Conference on The Modelling, Monitoring and Management of Environmental Problems
6 - 8 May 2002
Bergen, Norway

Organised by Wessex Institute of Technology, UK
http://www.wessex.ac.uk/conferences/2002/env02/

The 56th annual meeting of the Phycological Society of America will be held 3 - 8 August 2002 at the Pyle Conference Center, University of Wisconsin campus, Madison, Wisconsin (USA). The PSA will meet jointly with the Botanical Society of America and the Canadian Botanical Association. The PSA portion of the program will consist of a Plenary Lecture, organized symposia, and contributed oral and poster papers.

Requests for funding of organized symposia (up to $6000 each) at the 2002 meeting will be accepted until 15 August, 2001. Applicants must provide a 2 page (or less) summary of the proposed symposium within which potential speakers, title of presentations, and allocation of requested monies (travel/lodging costs, honoraria, etc) are identified. The written requests will be reviewed by the PSA Program and Executive Committees in late August, 2001. Applicants will be notified of funding status soon after.

Please submit symposium funding requests as text in the body of the electronic-mail message, not as attachments, to: lfritz@nsf.gov. If electronic mail is not possible, a 'hard copy' may be sent by regular mail or air mail to Lawrence Fritz, Program Director, National Science Foundation, Suite 615, 4201 Arlington Blvd., Arlington, VA. 22230
Fenner Conference on the Environment
Biodiversity Conservation in Freshwaters
Australian Academy of Science "Shine Dome"
Canberra
5-7 July 2001

Registration forms for the Fenner Conference will shortly be posted to all who expressed interest in the conference. However, you can register electronically on the Fenner Web Page

http://aerg.canberra.edu.au/fenner/

There is an early-bird discount of $100 for those registering before May 18, bringing the full registration down from $445 to $345. A special rate for full time students of $125 applies. The Day Rate is $175.

Deadline for abstracts is May 18, and these too can be submitted electronically through the web page or by email to

conference@conlog.com.au.

The program will be continually updated on the web as people submit abstracts. All keynote speakers and invited speakers are currently posted, so visit the site. We have some great speakers lined up.

The Australian Society for Limnology email list To subscribe send a blank email to ASL-subscribe@asl.org.au For all other email functions email ASL-help@asl.org.au

OVERSEAS

The **CHEMICAL OCEANOGRAPHY** GORDON CONFERENCE is taking place this summer from August 12-17, 2001 at Tilton School, Tilton, NH. Check out theGordon Conference web site to see the program as it stands presently andfind information about registration

"Plankton Symposium" in Espinho, Portugal. T (GET DATES) the symposium web site at www.plankton-symposium.net has been updated with more detailed information concerning abstract and paper submission and instructions for authors, agenda and registration. E-mail: planktonsymposium2001@net.sapo.pt

25th **Annual Larval Fish Conference**, August 8-13, 2001 The National Marine Fisheries Service's Howard Laboratory on Sandy Hook,New Jersey, USA, is pleased to host the 25th Annual Larval Fish Conferencefrom August 8 through 13, 2001. http://www.sh.nmfs.gov/lfc2001.html

River Basin Management 2001, 11 - 13 September 2001, Cardiff, Wales, The deadline for final papers is 8 May 2001, see http://www.wessex.ac.uk/conferences/2001/river01/

10th **International Conference on Rainwater Catchment Systems** A conference within **Rainwater International** 2001. In conjunction with The International Rainwater Fair and The Forum: Rainwater Harvesting in Practice Date: 10 - 14 September 2001 Location: Mannheim, Germany up-to date-information at www.rainwaterconference.org.

THE 8th **INTERNATIONAL WATERFOWL AND WETLANDS SYMPOSIUM** will be held inWashington D. C. 20 - 22 July, 2001.. For further information on the scientific programor other details contact BRENDA CARLSON (bcarlson@ducks.org) Additional symposium and registration information will be available atwww.ducks.org.

WATER RESOURCES MANAGEMENT 24 - 26 September 2001, Halkidiki, Greece FOR THE LATEST CONFERENCE INFORMATION VISITOUR WEB SITE AT:http://www.wessex.ac.uk/conferences/2001/wrm01/

International Congress on **Invertebrate Reproduction and Development** 15-20 July 2001 9th: Rhodes. University, Grahamstown, South Africa. Inquires Alan Hodgson, Rhodes University 6140 South Africa ph (+46) 6038526 fax (+46) 6224377.

Seventh International Phycological Congress: August 2001 Thessaloniki in north-eastern Greece. For more details, visit our website at: http://dictyocha.bio.auth.gr/7ipc2001 or try http://www.seaweed.ie/phycologia

29th International Association of Theoretical and Applied Limnology August, 2004. (SIL): Helsinki, Finland.

Environmental Flows for River Systems

3 - 8 March 2002 • Cape Town, South Africa

An International Working Conference on Assessment and Implementation incorporating the

Fourth International Ecohydraulics Symposium

• Tel: +(27) 21 685 4166 • Fax:- +(27) 21 685 4630
• E-mail: conference2002@southernwaters.co.za

AUSTRALIAN

The **MODSIM 2001** Congress will be held on 10-13 December 2001 at ANU, Canberra. The conference web address is http://cres.anu.edu.au/~tony/modsim2001.htm

ASPAB 2001 http://www.bigfoot.com/~aspab_31 August to 2nd September, 2001, Heron island, Qld, Contact Philip Orr, ASPAB Vice-President, Chairman of the 16th ASPABConference Organising Committee

WA STATE LANDCARE CONFERENCE 2001 The web site for the conference is: http://www.avonicm.org.au/avonicm/lcconference

ASL VOLUNTEERS

The following people have volunteered to speak as experts on behalf of the ASL. If you wish to be included on the list contact:

Dr Richard Marchant (ASL Secretary)
Email: rmarch@mov.vic.gov.au

Prof Angela Arthington:
in stream flows, ecology of exotic fishes, conservation of rare fishes.
Centre for Catchment & In-Stream Research, Griffith University, Natham Qld. 4111.
Phone (07) 3875 7403, Fax (07) 3875 7615, email: a.arthington@mailbox.gu.edu.au

A/Prof Paul Boon:
bacteriological issues, wetlands.
School of Life Science & Technology, Victoria University, PO Box 14428 MMC, Vic. 8001.
Phone (03) 9365 2214, Fax (03) 9365 2465, email: paul.boon@vu.edu.au

Dr Andrew Boulton:
intermittent streams, hyporheic zones, Flinders Ranges.
Department of Ecosystem Management, University of New England, Armidale, NSW 2351.
Phone (02) 6773 3760, Fax (02) 6773 2769, email: aboulton@metz.une.edu.au

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A few changes have been to the membersip form since the last issue. ASL is not registered for GST, therefore ASL does not charge GST

Alternatively go to the ASL website (http://www.asl.org.au/asl_member.htm), follow the link to 'Membership application via the web'. Fill in the details on the form, including credit card details and submit.

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